

HISTORICAL RECORD

OF THE

REFERENCE BOOK

"QUEEN'S OWN" SAPPERS AND MINERS,

CONTAINING

AN ACCOUNT OF THE ESTABLISHMENT OF COMPANIES
OF PIONEERS IN 1780,
THE FORMATION OF THESE COMPANIES INTO A
BATTALION IN 1793,
THE CONVERSION OF THE PIONEERS INTO A CORPS OF
SAPPERS AND MINERS IN 1831,
AND A HISTORY OF THEIR SERVICES FROM 1780 TO 1876.

BY

LIEUTENANT-COLONEL W. J. WILSON,

RETIRED LIST,

FORMERLY OF THE 43RD REGIMENT, MADRAS NATIVE INFANTRY.

REFERENCE BOOK

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PREFACE.

I AM indebted to Colonel Prendergast, V.C., C.B., R.E., Commandant of the Corps, for the accounts of the services of the several Detachments employed in Malacca, Scinde, Affghanistan, Persia, Central India, and Abyssinia.

The account of the Corps from the period of the establishment of a body of Pioneers in 1780 up to the conversion of the two Battalions of Pioneers into a Corps of Sappers and Miners, viz., the 1st Battalion in 1831, and the 2nd Battalion in 1834, has been compiled from the records in the Government Office and in that of the Adjutant-General, where I have been afforded every assistance.

When the history of a Regiment can be traced to a considerable extent from a series of public acknowledgments for services rendered throughout the period of its existence, as may be done in the case of this very distinguished Corps, comment on the part of the Compiler would be superfluous, and I have therefore abstained from introducing any matter beyond that which was required to form a connected narrative.

MADRAS, }
10th March 1877. }

W. J. WILSON.

"QUEEN'S OWN" SAPPERS AND MINERS.

THE ROYAL CYPHER WITHIN THE GARTER.

"SERINGAPATAM," "JAVA," "EGYPT," "ASSAYE," "MAHIDPOOR,"
"NAGPORE," "AVA," "LUCKNOW," "CENTRAL INDIA."

A Company bears on its appointments a Dragon wearing an Imperial Crown with the words "China," "Pegu," "Taku Forts," "Pekin."

B Company, the Dragon, "China," "Pegu," "Persia."

C Company, "Meanee," "Hyderabad" 1843, "Pegu."

E Company, "Pegu."

F Company, the Dragon, "China."

G and H Companies, "Abyssinia."

K Company, "Taku Forts," "Abyssinia."

Honorary Colonel.

H. R. H. ALBERT EDWARD, Prince of Wales and Duke of Cornwall,
K.G., K.T., G.C.B., K.P., G.C.S.I., Field Marshal.

THE Madras "Sappers and Miners" were originally a corps of Pioneers officered from the line. They were first raised in 1780, and were maintained until 1831, when in conformity with instructions from the Court of Directors, the 1st Battalion was placed under the command of Engineer Officers and regularly instructed as Sappers and Miners, which designation the corps has since continued to bear. The 2nd Battalion of Pioneers continued on the establishment until early in 1834, when the European Officers were sent to rejoin their respective regiments, and the Native Commissioned and Non-Commissioned Officers and men were incorporated into the "Sappers and Miners."

Between 1761 and 1780 companies of Pioneers and of Miners were formed from time to time of volunteers from the European Infantry and the Native Battalions, and were broken up when no longer required.

During the period above specified these companies were frequently employed, viz., at the siege of the Fort at Vellore in 1761 by the force under Colonel John Caillaud commanding the Army; with the expedition against the Spanish Settlements in the Philippine Islands in 1762; at the storm of the town of Manilla and the capture of the citadel on the 6th October

Early services of
volunteer Pioneers
and Sappers.

of that year ; at the siege and surrender of Tanjore in 1771, on which occasion their conduct was highly praised by General Joseph Smith ; at the second siege and storm of the same place in 1773 ; at the siege and capture of Pondicherry in 1778 by the army under Sir Hector Munro ; and at the capture of the French Settlement at Mahé in 1779.

The existence of Pioneers as a permanent branch of the army appears to have commenced in September 1780, when an order was issued directing the formation of two companies of the undermentioned strength, viz., 2 Serjeants, 3 Corporals, 5 Havildars, 5 Naigues, and 100 Native Privates. The men were dressed in blue, 50 of each company were armed with light pistols, and the remaining 50 with pikes six feet long. The Havildars were to receive $3\frac{1}{2}$ pagodas* each per mensem, the Naigues $2\frac{1}{2}$ pagodas, and the Privates 2 pagodas.

The Pioneers marched with the advanced guard of Sir Eyre Coote's army from St. Thomas' Mount for the relief of Wandiwash in January 1781, and were present at the battle of Porto Novo near Cuddalore on the 1st July. Their position on the line of march the day before the battle was determined in an order dated 29th June, from which the following is an extract :

" One company of Pioneers to march at the head of the line, and the other to be divided among the divisions of guns in the line."

No further separate notice of the Pioneers during this campaign has been found, but there can be no doubt that they were present with the army at the battle of Polliloor on the 27th August and that of Sholin-ghur on the 27th September 1781, inasmuch as Colonel Owen of the Bengal Army, who was sent into the Chittoor hills with his brigade shortly after the battle last mentioned, and who was attacked by Hyder with nearly his whole army at the pass of Veeracandeloor on the 23rd October, mentions a company of Pioneers under Lieutenant Innes as having been present at that action.

At this time a detachment of Pioneers under Lieutenant Abbott was serving with the Southern Army commanded by Sir Hector Munro, and was present at the siege and capture of Negapatam from the Dutch in October and November.

About the 1st January 1782 the detachment under Lieutenant Abbott, augmented by volunteers from the 9th† and 23rd‡ Native Battalions, embarked at Negapatam with the expedition against the Dutch pos-

* A pagoda was worth $3\frac{1}{2}$ Rupees, which in former days was held equal to 7 shillings.

† The present 9th Regiment, M. N. I.

‡ The 23rd Battalion was disbanded at the reorganisation of the Madras Army in 1796.

sessions in Ceylon, and were present at the capture of Trincomalee on the 5th January and at that of Fort Ostenburgh on the 11th idem.

It may fairly be presumed that the companies serving with Sir Eyre Coote's army. Eyre Coote's army in 1781 continued with it during the remaining operations of that year and those of 1782, viz., the relief of Vellore in November 1781 and again in January 1782; the skirmishes with Hyder on the marches to and from that place, and the battle at Arnee on the 2nd June.

A detachment of the corps served with the army under Major-General James Stuart in 1783, and was engaged in the operations against the French at Cuddalore in the month of June. Intelligence of peace with France having been received early in July, hostilities ceased at Cuddalore, and the army returned to Madras in August.

During this year a force under Colonel Ross Lang of the Madras Army, was employed to create a diversion against Tippoo by attacking his districts of Dindigul and Coimbatore, and to this force a small body of Pioneers was attached. The Fort at Caroor was taken on the 3rd April, that at Averacoorchy on the 16th idem, and that at Dindigul on the 5th May. Shortly afterwards Colonel Lang was superseded by Colonel William Fullarton of H.M. 98th Regiment, and the force was augmented to the strength of about 13,600 men, of whom about 2,000 were Europeans. The Pioneers, amounting to 147 men, under the command of Ensign Cunningham, proved remarkably useful during the continuance of the service. They

were engaged in the attack and capture of the Fort at Panjalamcoorchy on the 12th August; in that of the stronghold of the Shevagherry Polygar on the 2nd September; at the reduction of the Forts at Camalum, Chucklegerry, and Annamally in October; at the siege and capture of the Fort at Palghautcherry on the 13th November; and the surrender of Coimbatore on the 26th idem. The services of the Pioneers at Panjalamcoorchy were thus acknowledged by Colonel Fullarton:—

"Our next object was to remove a strong hedge fronting the breach and surrounding the whole Fort, as is the practice in the Polygar system of defence. This dangerous service was effected with unusual skill by Ensign Cunningham commanding the Pioneers, and about ten at night, with the advantage of bright moonshine, the storm* commenced."

The following extract from the report of the same officer relates to

* The assault was repulsed with loss although led by two companies of Europeans. Immediate measures were taken to renew the attack, but the Polygars, disheartened by their loss, abandoned the place the same night.

the operations against the stronghold of the Shevagherry Polygar, at that time the most powerful of the southern chiefs, and who had on former occasions beaten off considerable detachments:—

"After reconnoitring we found that the comby* could not be approached in front. We proceeded therefore to cut a road through the impenetrable thickets for three miles to the base of the hill that bounds the comby on the west. The Pioneers under Ensign Cunningham labored with indefatigable industry.

* * * *

"We continued to cut our way under an unabating fire from eight thousand Polygars, who constantly pressed upon our advanced party, rushed upon the line of attack, piked the bullocks that were dragging the guns, and killed many of our people. But those attempts were repulsed by perseverance, and before sunset we had opened a passage entirely to the mountain."

The Pioneers also proved most efficient during the march from Annamally to Palghautcherry, which is thus described by Colonel Fullarton:—

"From Annamally our progress became truly laborious; we had to force our way through a forest twenty miles in depth, extending thirty miles across the pass of Palghaut. Our object was to reach Calingoody, a post on the western side of the forest within fifteen miles of Palghautcherry. The frequent ravines required to be filled up before it was possible to drag the guns across them; innumerable large trees which obstructed the passage required to be cut down and drawn out of the intended track, and then the whole road was to be formed before the carriages could pass. The brigades were distributed to succeed each other at intervals, preceded by Pioneers in order to clear what the advanced body had opened, for the guns and stores that were to move under cover of the rear division."

In March 1784 peace was made with Tippoo, and the Pioneers do not appear to have been again employed on field service until September 1788, when a small detachment under a European officer was attached to the force under Lieutenant-Colonel James Eidington, which took possession of the district of Guntoor.

In March 1789 a detachment of 80 Pioneers was sent from Trichinopoly to join the field force assembled under Lieutenant-Colonel Stuart, H.M. 72nd† Regiment, for service in the Shivagunga country. It was present at the capture of Collargoody on the 14th May, and of

* A stronghold in the mountains.

† Originally the 78th or Seaforth's Highlanders; became the 72nd in 1785.

Ranamangalum and Calacoil on the 1st and 2nd June respectively. The following order was issued by Government on the conclusion of the service :—

Fort St. George, 17th June 1789.

"The service for which the detachment was sent into the Shiva-gunga country being nearly accomplished, Colonel Stuart is desired to take the necessary measures for the return of the troops to their respective stations, excepting one battalion of native troops, which the Colonel will dispose of in the Shivagunga country in such manner as he may judge expedient.

"Government take this opportunity of returning their thanks in this public manner to Colonel Stuart for his gallantry and good conduct in the command of the detachment, and they desire he will communicate to the officers and men their perfect approbation of the spirited and regular behaviour of the whole of the detachment during the service."

<p>Campaigns of Lord Cornwallis against Tippoo. 1791. Storm of Bangalore.</p>	<p>Cornwallis in the war with Tippoo during 1790, 1791, and 1792. They were actively employed in the operations at Bangalore from the 5th to the 21st March 1791, on which day the place was carried by assault.</p>
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Their loss during that time was 24 killed and 25 wounded, being greater than that of any other individual corps engaged, with the exception of H.M. 36th Foot, which had 10 killed and 58 wounded. They were present at the action near Seringapatam on the 15th May, and at the capture of several hill forts in the Mysore country during the year, the principal of which were Rahmandroog and Nundidroog, the former of which fell on the 17th September and the latter on the 18th October. The following is an extract of that part of the order issued by Lord Cornwallis on the occasion last referred to which concerns the Pioneers :—

<p>Storm of Nundidroog.</p>	<p>"Although the services of Pioneers are less brilliant than those of the troops, they are of peculiar value in all such operations, and His Lordship thinks himself called upon in justice to Lieutenant Dowse and all the Non-Commissioned officers and men of the Pioneer corps, as well as to Ensign Stokoe of the Engineers, who assisted with so much ability in directing their labors, to declare that their behaviour on this occasion has deserved his highest commendation."</p>
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<p>Storm of Savendroog and Ootradroog.</p>	<p>A detachment was present at the assault and capture of the strong Fort of Savendroog on the 21st December by the force under Lieutenant-Colonel Stuart, and also at the storm of Ootradroog on the 24th idem.</p>
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The following is an extract from the order issued by Lord Cornwallis on receiving Colonel Stuart's report of the reduction of the latter place :—

"His Lordship likewise desires * * * and that it may be particularly signified to Lieutenant Macinnes of the 72nd Regiment, who led the European company, and to Lieutenants Macpherson and Dowse, who conducted the European and Native Pioneers that were employed in carrying the scaling ladders to break open the gates, that from Lieutenant-Colonel Stuart's report he considers their behaviour highly meritorious."

The army under Lord Cornwallis arrived before Seringapatam on the 6th February 1792, and on the same night an attack in three divisions was made upon the redoubts and other outworks of the place. The number of Pioneers then with the army was about 1,000; of these one detachment under Lieutenant Lennon accompanied the right division under Major-General Medows, another under Lieutenant Dowse accompanied the centre division under Lord Cornwallis, and a third under Ensign Stokoe of the Bengal Engineers proceeded with the left division under Lieutenant-Colonel Maxwell. These divisions were successful in their several objects, and the posts carried were maintained. The Pioneers continued to be employed in the operations of the siege until the 24th February, when hostilities ceased pending the settlement of conditions of peace, which was finally concluded on the 18th March.

At the end of June the Pioneers under Lieutenant Dowse were sent from Trichinopoly to Madura to join a field force then being assembled at Palamcottah under Lieutenant-Colonel Maxwell. In December they were sent to Dindigul and were employed in clearing the forest there until May 1793, when they marched for the Baramahal.

In June 1793, at the recommendation of Colonel Brathwaite, commanding the army, the corps of Pioneers was augmented and formed into six companies.

It was at the same time ordered that it should henceforth be considered as a separate corps on the establishment, and that the officers attached thereto should be returned in it solely. On the 11th July the establishment of the Battalion was fixed at 1 Lieutenant Commandant, 3 Lieutenants, 1 Assistant Surgeon.

Each Company to consist of 1 European Serjeant, 1 Jemadar, 3 Havildars, 3 Naigues, and 100 Privates.

The European officers were to be furnished from the Infantry, and to rise in the general list of the army in the same manner as other officers. The Lieutenant Commandant was at the same time granted the

1792.

Siege of Seringapatam.

1793.

Formation of the corps
into a battalion.

Off- reckonings to the
Commandant.

privilege of being on the same footing with regard to off-reckonings as the Commandants of corps of Native Cavalry.

The pay of the European Serjeants, and of the Native Commissioned, Non-Commissioned Officers

and men was fixed as follows:—

Serjeant ...	...	10	pagodas per mensem.
Jemadar ...	...	7	„ 10 fanams per mensem.
Havildar ...	...	2	„ 31 „ 75 cash per mensem.
Naigue ...	...	2	„ 10 „ 5 „
Private ...	...	2	„

The corps, then numbering 612 of all ranks, was employed during the siege and at the surrender of Pondicherry in August

Siege and surrender of Pondicherry. with the army under the command of Colonel Brathwaite, and was left there under Lieutenant Dowse for the purpose of demolishing the fortifications, and also all public buildings not required for the accommodation of the troops.

About the end of July 1794 the corps, still under Lieutenant Dowse, marched into the Baramahal for the purpose of dismantling several of the Hill Forts in that district which had been ceded to the British by Tippoo at the peace in 1792.

In July 1795 two expeditions sailed from Madras against the Dutch settlements, viz., one under Colonel James Stuart* of H.M.'s service, against those in Ceylon; and the other under Major Archibald Brown of the Madras army, against that in Malacca.

Two companies of Pioneers under Lieutenant Dowse accompanied the former, and one company under Lieutenant Heitland sailed with the latter. The detachment in Ceylon was present at the reduction of Trincomalee and of Fort Ostenburgh in August and at the capitulation of Jaffnapatam in September. Shortly afterwards it was joined by two companies from the Baramahal.

The company under Lieutenant Heitland was present at the surrender of the Fort at Malacca on the 18th August.

The detachment under Lieutenant Dowse was present at the capitulation of Colombo on the 15th February 1796, which was followed soon afterwards by the submission of the whole Island. Early in 1797 the Pioneers were ordered back to Madras, but at the earnest solicitation of Major-General Wellbore Ellis Doyle, then commanding the Island, and who represented that the services of a

* Commanded the Madras Army from 1801 to 1804.

detachment of Pioneers were indispensable, a party of 50 were allowed to remain and appear to have done duty in Ceylon until 1802 when it became a colony of the Crown after the peace of Amiens.

On the 6th January 1796 Lieutenant Heitland, with half his company, sailed for Amboyna with Admiral Rainer's squadron as part of the Madras detachment commanded by Major Urban Vigors of that army. The rest of the company remained in garrison at Malacca. Amboyna was taken in February, and the squadron then sailed for Banda-Neira, and the other Spice Islands, all of which were taken possession of without opposition. Two companies of Pioneers remained in the Moluccas until the peace with the Dutch in 1802.

In March 1797, Government, in consideration of the readiness with which the Native Troops had volunteered for foreign service in Ceylon and to the eastward, issued an order, from which the following is an extract, granting certain allowances to the relatives of those sepoys who might be killed or die on that service :—

Fort St. George, 19th March 1797.

"The Right Honorable the Governor in Council, who reflects with the highest satisfaction on the unexampled alacrity and spirit with which the coast Native Troops have embarked for foreign service during the present war, is naturally led to consider every means of preserving that spirit and of rewarding that zeal; he has therefore been pleased to resolve—

1st. That a gratuity of three months' allowances (such as they have hitherto drawn on their family chits) shall be given to the relations of those sepoys who may be killed or die on service to the eastward, from the date of the account of the casualty being received at the station where the chit is paid.

2nd. That a gratuity of two months' allowances shall be given on the same terms to the relations of those sepoys who may be killed or die on service in the Island of Ceylon."

On the 26th August 1797, 300 Pioneers embarked at Madras as part of the expedition under the command of Major-General Sir James Craig K.B., which was intended to proceed against Manilla, but the design having been abandoned the troops were relanded a few days after their embarkation.

The Pioneers then marched to Arnee, from which place a detachment of 200 men, under Lieutenant Fitzpatrick, proceeded to the coast and embarked for service in Ceylon.

The readiness to volunteer again shown by the Native Troops on the occasion mentioned above, was recognized by Government in the following order :—

1798.

Fort St. George, 19th December 1798.

Honorary badges granted to the volunteers for the projected expedition against Manilla in 1797. " The Right Honorable the Governor in Council, impressed with a just sense of the zeal and ardor manifested by the Native Troops who volunteered for the projected expedition against Manilla, has caused badges to be prepared in commemoration of their spirit and attachment to the service.

" His Lordship in Council has particular pleasure at this period in ordering the distribution of these honorable pledges, and they will accordingly be forwarded by the Military Board to the Officers commanding corps for delivery to the commissioned, non-commissioned, and private volunteers.

" The Officers commanding corps are desired to explain to the volunteers that merit, however obscure, can never be indifferent to a just and wise Government, and that the successors of those who have the present pleasure of bestowing these badges of distinction will feel an equal satisfaction in recognising in the descendants of the volunteers these testimonials of fidelity and worth."

During the same month it was directed that all the Pioneers then serving within the limits of the Presidency should be formed into eight companies, each of the undermentioned strength, viz. :—

1 Serjeant.	3 Naigues.
1 Jemadar.	1 Puckally.
3 Havildars.	100 Privates.
1 Serjeant Major as non-effective staff.	

Early in 1799, in consequence of the war with Tippoo, the corps was augmented to the following strength, viz. :—

1799.

Augmentation of the corps.

2 Captains.	10 Serjeants.
1 Captain Lieutenant.	11 Jemadars.
1 Lieutenant.	30 Havildars.
1 Assistant Surgeon.	30 Naigues.
1 Serjeant Major.	1,000 Privates.
10 Puckallies.	

The battalion marched with the army under General Harris in February 1799, and was present at the battle of Mallavelly on the 29th March. During the siege of Seringapatam it was placed under the direction of Colonel Gent, senior officer of Engineers, and was employed in the operations which terminated in the storm and

Battle of Mallavelly.

Siege and capture of Seringapatam.

capture of that fortress on the 4th May. The following is an extract from the order issued by General Harris on the occasion:—

"In thus publicly expressing his sense of their good conduct, the Commander-in-Chief feels himself called upon to notice in a more particular manner the exertions of Captain Dowse and his corps of Pioneers, which, during the present service, have been equally marked by unremitting labor and the ability with which that labor was applied."

Lieutenant Cormick and 2 men were killed and 26 men wounded during the siege.

In April 1800 a detachment of Pioneers accompanied a field force

1800. sent from Seringapatam by the Honorable
Colonel Arthur Wellesley under the command of
Lieutenant-Colonel Montresor, H. M. 77th Regiment, and was present at the attack and capture

of the stronghold of the Rajah of Bullum at Arrakerry on the 30th idem. The country was a dense forest, and several ranges of strong barriers had to be overcome. Captain Onslow Grose, of the 2nd Battalion 2nd Regiment (20th Regiment M. N. I.), then doing duty with the Pioneers, was killed at one of the barriers, and was thus noticed in Colonel Montresor's report:—

"I trust I may be permitted to express a sentiment of gratitude and regret when I mention that gallant and meritorious officer, Captain Grose of the Pioneers, who unfortunately was killed early in the day in endeavoring to place some ladders at one of the barriers."

Colonel Wellesley, in his report to Army Head-quarters, wrote of Captain Grose as follows: "In Captain Grose, who was unfortunately killed, the Honorable Company have lost a gallant, active, and zealous officer, who will be lamented by his whole profession."

The troops engaged on this service received the thanks of the Commander-in-Chief and of Government, dated respectively 8th and 12th May 1800.

In June Colonel Wellesley marched against the famous partizan Dhoondiah with two brigades of Cavalry, three brigades of Infantry, and a body of Pioneers under Captain Heitland.

The Fort of Ranee Bednore was taken by assault on the 27th, on which occasion Colonel Wellesley expressed himself as "much pleased with the conduct of Colonel Stevenson and Lieutenant-Colonel Monypenny, and the troops under their orders."

On the evening of the 14th July, the Fort of Koondgul was taken by storm after the troops had marched above 22 miles, and had been more than 12 hours under arms.

On the 26th of the same month the Fort of Dummul was taken. An extract from the order issued on that occasion is given below. :—

Camp at Dummul, Saturday, 26th July 1800.

Colonel Wellesley cannot sufficiently express his satisfaction at the conduct of the troops engaged in the assault of Dummul this morning. His thanks are particularly due to * * * and to Captain Heitland and his corps of Pioneers."

The camp of Dhoondiah, under the Fort of Manowly on the River Malpurba, was surprised and cut to pieces on the 30th July, and on the 10th September he was finally defeated and killed at Conahgul; but neither Infantry nor Pioneers appear to have taken part in either of these two actions, which were fought by the Cavalry brigade after forced marches.

All of the troops employed upon this service received the thanks, both of the Madras Government and of the Governor-General in Council, dated respectively 25th September and 24th December 1800.

During this year Government having instituted inquiries into the condition of the native soldiery, became satisfied that the rate of pay allowed "did not bear a just proportion to the expense of maintaining themselves and their families, nor to the duties attached to the profession of arms," and the matter was represented to the Governor-General, under whose authority the amount of pay was increased, the change having effect from the 1st July 1800. The following is the scale then fixed for Pioneers :—

PIONEERS.									
Net pay per month, exclusive of stoppages for clothing.				Batta per day in the field.			Remarks.		
		Pags.	F.	C.	Pags.	F.	C.		
Jemadar	...	7	...	...	...	3	...	* Or in lieu thereof one seer of rice per day when rice is issued.	
Havildar	...	3	...	...	...	*1	40		
Naigue	...	2	21	...	...	*1	40		
Pioneer	...	2	10	...	...	*1	...		

Jemadars of six years' standing to receive nine pagodas, and Jemadars of ten years' standing to receive twelve pagodas per mensem.

These rates were ordered to be "clear and exclusive of all stoppages for clothing, which will continue to be provided for as at present by issues of cash from the Public Treasury."

It was at the same time resolved that the "Native officers and men, of whatever corps or ranks, who may lose a limb by wounds on actual service, shall be pensioned on the full pay of their respective ranks."

A small detachment of Pioneers accompanied the expedition to Egypt under Major-General Baird in December. This force, owing to contrary winds in the Red Sea, did not join General Hutchinson's army until September 1801. It left Cairo in May 1802 to return to India, and in July of that year it received the thanks of the Governor-General in Council.

In 1803 His Majesty's troops employed during the campaign were granted an honorary distinction, and such corps of the Company's army as had also served being allowed to participate in the honor, the Madras Pioneers were permitted to carry the word "Egypt" on their colors.

Early in 1801 the Polygars in the district of Tinnevely broke out into rebellion, and a force of about 3,000 men, under the command of Major Colin Macaulay, the Resident at Travancore, was assembled at Kytar to act against them. A detachment of Pioneers under Captain Bagshaw was attached to this force. On the 31st March it arrived before the stronghold of the Polygars at Panjalamcoorchy, which had been taken by Colonel Fullarton in 1783 as mentioned above. The Fort was of mud, with walls about 12½ feet high, surrounded by a thick hedge of thorns, but without any ditch. A breach which appeared practicable having been made, the troops advanced to the assault, but were repulsed* with heavy loss, viz., 4 officers and 49 men killed, and 13 officers and 254 men wounded. Of 120 men of H.M. 74th Regiment who composed part of the storming party only 46 escaped unhurt. After this failure the Pioneers were employed in raising breastworks and in strengthening the outposts of the camp. On the 21st May Lieutenant-Colonel A. P. Agnew, the Adjutant-General, arrived to assume command, and the next day a strong reinforcement, of which H.M. 77th Regiment formed a part, joined the camp. On the morning of the 23rd the Fort was assaulted and carried, but after a severe struggle, in the course of which 4 officers, 19 Europeans, and

* This has been given in some detail as the place is little known even in India. The brave defenders, although only armed with pikes and indifferent fire-arms, repulsed European troops on more than one occasion.

24 natives were killed, and 5 officers, 76 Europeans, and 96 natives wounded.

The force continued to be actively employed during June, July, August, and September, and the Polygars were reduced to submission early in October, on the 1st of which month the Fort at Caliacoil, the last stronghold of the enemy, was taken possession of by our troops. The greater part of the Polygar country was then a dense forest, and the labor undergone by the Pioneers and auxiliary working parties was extremely severe, and frequently performed under fire.

During this service an attempt was made to cut a road through the forest from the town of Sherwela to the Fort at Caliacoil, and was persevered in from the 31st July to the 30th August, when it was abandoned after about four miles of forest had been penetrated. The Pioneers were strengthened about the end of July by a detachment from Seringapatam under Captain Heitland, which served with the force until the close of the operations.

The following is an extract from the order issued by Government on the termination of the service :—

Termination of the
Polygar war.

"The whole course of operations connected with that service has been distinguished by a spirit of animated bravery and persevering exertion which has merited the warmest approbation of the Governor in Council, and His Lordship in Council, in bestowing upon the officers and troops the applause due to their conduct, reflects with the greatest satisfaction on the advantages which have been derived to the public interests by the suppression of a confederacy which threatened the most injurious consequences to the tranquillity of the British possessions."

Early in 1800 a strong detachment was assembled at Seringapatam for service in the Wynaad and in Malabar against the Pychy Rajah, but operations were postponed, and it did not move until late in the year, when

Service in the Wynaad
and in Malabar against
the Pychy Rajah.

Colonel Stevenson took command. The service was extremely severe and harassing, and was not concluded until May 1801, when Colonel Stevenson and the troops received the thanks of Government. The Pioneers suffered much from fever contracted in the jungles, and a large proportion of them were unfit for duty for some time after their return to Seringapatam. Those who recovered were sent to the south under Captain Heitland to join the force, under Colonel Agnew, then employed against the Polygars in Tinnevely.

On the 5th January 1802 Colonel Wellesley marched from Seringapatam against the Rajah of Bullum in Mysore, who had again become refractory, and on the 16th idem he attacked and carried the Fort at

1802.
Second capture of
Arrakerry.

Arrakerry. Captain Heitland and the Pioneers were thanked in an order of the day from which the following is an extract :—

"In the performance of this service I have had every reason to be satisfied with the zeal, alacrity, and good conduct of all. My acknowledgments are however particularly due to * * * and to Captain Heitland and his Pioneers."

The country in the neighbourhood of Arrakerry being thick forest, and every village being fortified, Colonel Wellesley left a strong detachment on the spot for the purpose of protecting the Pioneers under Captain Heitland and Lieutenant Davis, who were directed to fill up the ditches and destroy the fortifications of the villages, to open roads through the forest, and also down the several passes leading into Malabar, viz., the Bissly, Seisul, Sampojee, and Soobroomony ghauts. The fortifications of 25 villages appear to have been demolished on this occasion.

Early in 1803 the corps was further augmented, and reorganised in conformity with the following order, dated 28th January :—

1803.	increased to 16 companies, and to be formed into
The Pioneer Corps	two separate battalions, each battalion to consist
formed into two	of eight companies, and each company to consist
Battalions of 8	of the present strength, viz., 1 Jemadar,
companies each.	3 Havildars, 3 Naigues, 1 Puckally, and 100 Privates."

Captain W. P. Heitland to command the 1st Battalion.

Captain John Fitzpatrick do. 2nd do.

Captains John Brown and William Davis and Lieutenant Barclay to do duty with the 1st Battalion.

Captain E. B. Bagshaw and Lieutenant Grant to do duty with the 2nd Battalion.

In March of the same year the corps was distributed in the following manner, viz. :—

Seven companies of the 1st Battalion in camp, and the remaining company with the Hyderabad Subsidiary Force.

Six companies of the 2nd Battalion in camp, one company with the Hyderabad Force, and one company on foreign service to the eastward (i.e., Malacca and the Molucca islands).

The corps was actively employed throughout the Mahratta war in 1803 and 1804. The number serving with General Wellesley's army at the commencement of the campaign was about 650, and that which accompanied the Hyderabad Subsidiary Force under Colonel Stevenson about 200.

Mahratta War.
1803, 1804.

These detachments were present at the different actions and sieges in which their respective divisions were engaged, viz., the reduction of the fortress of Ahmednuggur in August 1803, on which occasion the conduct of Captain Heitland, commanding the Pioneers, met with the particular approbation of the Governor-General in Council, conveyed in an order dated at Fort William on the 8th September; the battle of Assaye on the 21st September, where 15 of the Pioneers were killed and 51 wounded; the capture of the pettah at Asseerghur on the 18th October, and the surrender of the fortress on the 19th idem; the battle of Argaum on the 29th November; and the siege and capture of the fortress of Gawilghur in December. The following is an extract from Major-General Wellesley's report of the siege of Gawilghur, dated 15th December :—

" In the performance of this service all the good qualities of British troops have been conspicuous to a degree which I have seldom witnessed. In bringing on their ordnance and stores to the point of attack, the troops of Colonel Stevenson's division performed the most laborious work with a zeal for the service, and patience and perseverance never surpassed; and when opposed to the enemy their conduct showed the same gallant spirit that has carried the British troops through so many difficulties in the course of this war.

* * * *

" Captain Heitland of the Pioneers and Captain Johnson of the Bombay Engineers are also entitled to my acknowledgments.

" The two latter were sent from my division to assist Colonel Stevenson."

The Pioneers were also engaged in the reduction of the hill forts of Chandore and Galnah on the 10th and 26th October 1804. On the 3rd September of that year Government determined that provision should be made for the families of native officers and soldiers killed in action, and the following order was issued accordingly :—

" 1st. The half pay of his rank shall be allowed to the nearest heir of every Native officer and soldier of Cavalry, Infantry, Pioneers, and Gun Lascars who has died in battle, or in consequence of wounds received during the late war against the Mahratta confederates.

" 2nd. In cases where the families of the deceased officers and soldiers may consist only of women and aged persons, the provision shall be continued during the life of the nearest heir of the family."

In February 1805 a brigade under Lieutenant-Colonel Colman, of which a detachment of Pioneers formed a part, was sent from Hyderabad to join the Poonah Subsidiary Force under Colonel Wallace at Ahmednuggur. A detachment was also employed during this year on field service with Colonel Doveton's Force in Candeish and in Berar.

1806.
Full batta allowed to
Pioneers whether in
the field or in
cantonments.

On the 11th March 1806 the Government, in consideration of the laborious nature of the duties upon which the Pioneers were frequently employed, issued an order to the effect that the corps should at all times be entitled to the following allowances, viz., the European officers to the difference between their half and full batta; the Non-Commissioned European officers to their nett dry batta according to regulation; and the Native Commissioned, Non-Commissioned and Privates to the full batta of their ranks respectively.

Four hundred Pioneers under the command of Captain Smithwaite served with the force under the Honorable Lieutenant-Colonel Arthur Sentleger* during the campaign in Travancore in 1809.

A detachment under Lieutenant Bertram formed part of the storming party under the command of Major Welsh, which carried the fortified position at Arambooly on the morning of the 10th February, which service was acknowledged in the following order:—

Fort St. George, 16th February 1809.

"The Honorable the Governor in Council has the greatest satisfaction in publishing in General Orders the following extracts of letters received from the Honorable Lieutenant-Colonel Sentleger, announcing the decisive and distinguished success which attended the storm of the lines of Travancore by the troops under the command of that officer:—

* * * *

"It is impossible for me to convey in language sufficiently strong the obligations I feel under to the personal exertions of Major Welsh, commanding 3rd Regiment Native Infantry, and the detachment for escalade under his command."

* * * *

"I feel it a duty I owe from the report of Major Welsh, of the Pioneers, who accompanied him, to express my entire approbation of

* 6th Madras Light Cavalry.

their conduct, and that of Lieutenant Bertram who commanded them."

"The Governor in Council considers the execution of the above service to reflect equal honor on the judgment with which it was planned, and on the signal zeal and bravery with which it was carried into effect. The Governor in Council accordingly conveys to the Honorable Lieutenant-Colonel Sentleger the expression of his warmest approbation and thanks, and Lieutenant-Colonel Sentleger is requested to make known to the officers and troops under his command, particularly to Major Welsh, who gallantly and ably conducted the party employed in the assault, and to the other officers mentioned by Lieutenant-Colonel Sentleger, the sentiments of cordial approbation due to their meritorious conduct."

A company of Pioneers under Lieutenant Patterson was engaged in the attack and capture of the fortified villages of Cotaure and Nagercoil on the 17th February. The following is an extract from Colonel Sentleger's report on the occasion :—

"Their lines were attacked at daylight under a heavy fire from the battery, and from guns which opened in all directions, and were gallantly carried after a sharp action. The village, which is one of the largest and finest I have seen in India, was completely scoured, and the enemy forced to retreat in great confusion, protected in a great measure by the strength of the country in their rear.

"I cannot sufficiently dwell on the judgment displayed by Lieutenant-Colonel Macleod* in the form of attack, and gallantry of its execution, which must ever reflect on himself the highest credit, and on the detachment under his command."

The Pioneers were also present at the capture of the Forts of Oodagherry and Papanaveram on the 19th February, with which event the campaign terminated.

In May 1809 the following complimentary order was issued regarding the conduct of a Madras force assembled at Bombay under the orders of Brigadier-General Sir John Malcolm for an intended expedition to the Persian Gulph :—

Fort St. George, 20th May 1809.

"The Honorable the Governor in Council has much satisfaction in publishing to the Army of this Presidency the following letter from Brigadier-General Malcolm, late Envoy to the Court of Persia, containing an honorable testimony of the conduct of the officers and

* H.M. 69th Regiment.

men belonging to this establishment, composing part of the force lately assembled at Bombay under the Brigadier's command :—

"To the Honorable Sir George Barlow, *Bart.*,
Governor in Council,
Fort St. George.

"Sir,—I consider it an act of justice towards the different details of this Presidency which composed part of the force assembled under my orders at Bombay, to report their meritorious and exemplary conduct during their stay on that Island.

"These details amounted to near 1,000 men, and the officers with them were about 50, and it will, I trust, be considered as highly honorable to the character of the Coast Army, that during five months that this party of troops were encamped near the populous town of Bombay I had not one complaint against them from any officer of Police, or from any of the authorities under Government, nor had I occasion to pass a censure on the conduct of any one officer, or to notice the occurrence of the slightest difference or contention between any of the individuals of the detachment during the whole of that period.

"I trust I shall be pardoned stating the obligation I feel towards Major Russell, Captain Showers, Captain Poignand, and Captain Fitzpatrick,* who commanded the different details of Cavalry, Artillery, Horse Artillery, and Pioneers under my orders.

* * * *

(Signed) JOHN MALCOLM,

MADRAS, 19th May 1809."

Brig.-Genl.

"In consideration of the expenses to which the troops above alluded to were exposed while under orders for foreign service at Bombay, the Governor in Council has been pleased to resolve that the officers and men of all the details, European and Native, and also the public followers, shall be allowed one month's full batta after their arrival at their respective destinations, independently of that to which they may be entitled for marching thither.

"The Governor in Council, advertent to the alacrity with which the several details composing the force proceeded on the service in question, has been pleased to confer upon the Native officers and soldiers honorary badges to be worn as a mark of distinction, and as a proof of the sense entertained by the Governor in Council of their attachment to

Honorary distinction
granted to certain
corps (Pioneers in-
cluded), in recogni-
tion of their alacrity
in proceeding upon
Foreign service.

* Commanded three companies of Pioneers.

the service, and of their meritorious conduct while absent from their own establishment."

Establishment of each
Battalion fixed at
700 Privates.

In the month of June the establishment of each
battalion of Pioneers was fixed at 700 Privates.

In November the force assembled at Ashty under Colonel Barry
Close for service in the Nagpore territories then
invaded by Ameer Khan, was formed into two
Brigades of Cavalry and three Brigades of

Field force in Berar
under Colonel Close.

Infantry. A body of Pioneers under Captain Bowes was attached.

1810.

This force occupied Seronge in March 1810, and
remained in the field until May, when Colonel
Close returned to Hyderabad, leaving one brigade to watch the Berar
frontier, and with this brigade one company of Pioneers remained.

Early in the year an expedition was organised at Madras against
the Island of Bourbon, and on the 23rd March Major-General Gowdie,
commanding the army, reported to the Governor-General that the
number of Native Troops who had volunteered
amounted to about 7,000 men, being nearly three
times the number required, and he at the same
time recommended the officers and men, amongst whom were Captain
Smithwaite and the Pioneers, to favorable notice, in consequence of
which the following order was issued:—

Expedition against
Bourbon.

Fort St. George, 6th April 1810.

"The Right Honorable the Governor-General in Council is happy to
observe by the following extract from a letter
from the officer commanding in chief that the
confidence in the attachment and discipline of the

Alacrity of the Native
Troops in volunteer-
ing for foreign service.

Native Army under this Presidency, which was manifested by the recent
determination of the Government to employ a respectable detachment
from it upon foreign service, has been fully justified by the alacrity and
ardor with which not only the troops selected for that duty, but
several other corps, have volunteered for foreign service; and His
Lordship requests that Major-General Gowdie will convey to the whole
of these troops the expression of his warm approbation of the zeal,
fidelity, and military spirit by which their conduct has been distin-
guished on this important occasion.

"The Right Honorable the Governor-General in Council is happy to
avail himself of this opportunity of expressing his fullest approbation
of the meritorious and zealous exertions on this occasion of the officers
whose names have been brought to his notice by Major-General
Gowdie."

In the month of May a detachment of 200 Pioneers under Lieutenant Scouler embarked at Quilon as part of the expedition, and was present at the capitulation of St. Denis and the surrender of the Island of Bourbon on the 8th July. Lieutenant-Colonel Hastings Fraser commanding the first brigade, in his report of the surrender, dated 9th July, mentions Lieutenant Scouler of the Pioneers as having rendered him the most essential service. The detachment was also present at the surrender of Port Louis and the Isle of France on the 2nd December.

Revision of
Establishment.

In October of this year the establishment of a battalion of Pioneers was fixed as follows:—

Captains	...	...	...	...	...	...	3
Subalterns	...	...	...	...	...	...	4
Assistant Surgeon	...	...	...	...	...	...	1
Jemadars	...	...	...	...	...	...	8
Serjeant-Major	...	...	...	...	...	...	1
Havildars	...	...	...	...	...	...	24
Puckallies	...	...	...	...	...	...	9
Naigues	...	...	...	...	...	...	24
Privates	...	...	...	...	...	...	700

Attached to the Battalion

Maistry-Bricklayers	...	...	...	...	...	2
Stone-cutters	...	...	...	...	...	3
Sawyers	...	...	...	...	...	3
Conicopolies	...	...	...	...	...	2
Vakeel	...	...	...	...	...	1
Maistry	...	...	...	...	...	1
Carpenters	...	...	...	...	...	4
Smiths	...	...	...	...	...	4
Hammermen	...	...	...	...	...	4
Bellows boys	...	...	...	...	...	4
Native Dressers	...	...	...	...	...	2
Toties	...	...	...	...	...	2

The Serjeants attached to battalions of Pioneers up to this time were thus dispensed with, and this grade does not appear to have been again introduced until the conversion of the Pioneers into Sappers and Miners in 1831.

In April 1811 a body of Pioneers, consisting of 1 Captain, 4 Lieutenants, 2 Ensigns, and 300 natives, embarked on the Expedition against Java, join the expedition against Java, and was present during the operations which terminated in the capture of the works

and Fort at Cornelis on the 26th August, and in the submission of the Island in September.

The following is a copy of the order of the Commander-in-Chief conveying to the troops the thanks of His Royal Highness the Prince Regent for their services during the expedition :—

Head Quarters, Choultry Plain, 23rd May 1812.

“Lieutenant-General Sir Samuel Auchmuty has it in command from
 Thanks of the Prince His Royal Highness the Prince Regent to convey
 Regent. in Public Orders, and in the strongest terms, to
 the troops who achieved the conquest of Java,
 His Royal Highness’ approbation of the distinguished gallantry and
 spirit displayed by them during a succession of the most brilliant
 operations, and in particular on the 26th August, when the enemy’s
 entrenchments were assaulted and carried, and their army defeated and
 destroyed.

“In communicating so gratifying an acknowledgment of their
 valuable services, the Lieutenant-General is convinced that the army
 it was his good fortune to command will justly appreciate the distin-
 guished honor conferred on them by His Royal Highness’ gracious
 approbation.

“The marks of Royal approbation bestowed on their leaders are
 a source of pride and gratification to every rank in well-conducted
 armies. With this impression the Lieutenant-General cannot refuse
 the assailants at Cornelis the satisfaction of knowing that His Royal
 Highness the Prince Regent has graciously announced his intention of
 bestowing medals on the superior officers of His Majesty’s and the
 Honorable Company’s Forces who distinguished themselves on the
 memorable service.”

The native troops which formed part of the expedition against the
 1812. French Islands in 1810 having returned to their
 Presidency early in 1812, the following order
 was issued shortly after their arrival :—

Fort St. George, 11th February 1812.

“The whole of the native troops employed in the late expedition
 against the Islands of Bourbon and Mauritius having returned to
 Fort Saint George, the Honorable the Governor in Council performs
 a satisfactory part of his duty in requesting that His Excellency the
 Commander-in-Chief will be pleased to convey to the several native
 corps and detachments which served at the conquest of those Islands,
 the public thanks of the Government for the alacrity with which they
 embarked on that service, for the gallantry which they displayed when

opposed to the enemy, and for their uniform good conduct on all occasions during the period of their absence from the coast."

In August of the same year a force was assembled at Bellary under Lieutenant-Colonel Dowse for field service in the southern Mahratta country, consisting of a detachment of Artillery, the 1st Battalion H.M. 56th Regiment, 1st Battalion 22nd Regiment Native Infantry, 1st Battalion 24th Regiment Native Infantry, and a detachment of Pioneers. This force continued in the field until May 1814, when it returned into the Madras Presidency with the thanks of the Resident at Poonah and the approbation of the Governor-General in Council conveyed in a letter dated Fort William, 20th May 1814.

On the 23rd February 1813 new regulations for the Recruit establishments attached to corps were published, and on that occasion Recruit and Pensioned Boys appear to have been allowed to the corps of Pioneers for the first time. The number fixed for each battalion was 30 Recruit and 30 Pensioned Boys, who were to be entertained in conformity with the following rules:—

Recruit boys were to be chosen from the sons or near relatives of old soldiers; they were not to be entertained under the age of 11 years, and if not fit for transfer to the ranks at the age of 18 they were to be discharged. Their pay was fixed at one Star Pagoda (about 7 shillings) per mensem until dismissed from drill and fit to take their tour of common duties, when they were to be transferred to the effective establishment of the corps to which they belonged, and were entitled from that time to the pay, clothing, and all other allowances of effective soldiers.

Pensioned Boys were admissible at any age. They were to be selected from among the sons of deceased native officers and soldiers, but in the absence of any children of that description, then the sons of native officers and soldiers who might have large families without adequate means of maintaining them were to be considered eligible. Pensioned Boys on attaining the age of 11 years were, if fit, to be transferred to the establishment of Recruit Boys, and if not fit for such transfer at the age of 14 years, then to be discharged. The pay of Pensioned Boys was the same as that of the Recruit Boys.

In June 1813 a complimentary order was issued by the Commander-in-Chief in Java, which was published to the Madras Army in an order from which the following is an extract:—

Head Quarters Choultry Plain, 10th August 1813.

The following General Order by the Commander-in-Chief of the forces on the Island of Java, dated Head-quarters, Weltevreden, 5th June 1813, having been received, His Excellency the Commander-in-Chief has great satisfaction in publishing it to the army as an additional testimony of the merits of * * * as well as of the detachment of the Madras Pioneers :—

Head Quarters Weltevreden, 5th June 1813.

* * * *

Complimentary order by the Commander-in-Chief in Java. "The Commander-in-Chief has equal pleasure in recording his sense of the conduct of the detachment of the Madras Pioneers commanded by Lieutenant Stuart, who have been uniformly distinguished by a zeal and steadiness, and patient enduring under trying circumstances, which have rendered their services eminently useful, and themselves deserving of particular regard and consideration."

Revision of the establishment of European officers. On the 3rd November of this year the establishment of European officers fixed in October 1810 for a battalion of Pioneers of eight companies was revised, and ordered to consist of 2 Captains, 6 Subalterns, and 1 Assistant Surgeon.

1814. An Adjutant allowed to each battalion. In December 1814 an Adjutant was allowed for each battalion of Pioneers, and these appointments having been conferred on Subalterns serving with the corps, an additional Subaltern was posted to each battalion.

Detachment formed for service in Ceylon. During the same month a strong body of Pioneers was attached to a force assembled under Lieutenant-Colonel Thompson for service in Ceylon, but the rebellion in that Island having been suppressed before the embarkation of the force, it was broken up in January 1815.

1815. Army of Reserve. Early in 1815 two companies were employed with the Hyderabad Subsidiary Force under Colonel Doveton, then in advance near Ellichpore. An army of reserve, to which a body of Pioneers was attached, was formed at this time, and the Commander-in-Chief assumed command of it on the 31st March, but the force was broken up on the 25th April, being no longer required.

Surrender of Kurnool. In November a body of Pioneers was attached to the force assembled at Gooty under Colonel Marriott for service in Kurnool, and was present at the surrender of the Fort at the town of that name on the 15th December. The force

was broken up in June 1816 and an ordinary garrison left in occupation of the district, on which occasion the following order was issued:—

Fort St. George, 29th June 1816.

"The Governor in Council takes the occasion of breaking up the force assembled for field service in Kurnool to publish in General Orders his entire satisfaction with the zeal and ability manifested by Colonel Marriott in all the operations of his late important charge. The exemplary conduct in every respect of the officers and soldiers who served under his command is also entitled to high commendation."

The garrison remained in Kurnool until April 1817, when the British troops were withdrawn from that territory.

When the Mahratta war broke out in 1817, 400 Pioneers were attached to the first division of the army of the Deccan under the personal command of Lieutenant-General Sir Thomas Hislop, Commander-in-Chief, 400 to the second division under Brigadier-General Doveton, and 400 to the reserve division commanded by Brigadier-General Thomas Munro.

During this service, which continued until May 1819, the Pioneers were actively employed, and were present at the actions and sieges specified below, viz., Brigadier-General Lionel Smith's action at the Yelloura Ford near Poonah on the 16th November 1817, where 1 Havildar and 4 Privates were wounded.

The battle before the city of Nagpore on the 16th December, and the siege of that place from the 19th to the 30th idem, when it capitulated. 1 Jemadar and 7 Privates were wounded during the siege.

The battle at Mahidpoor on the 21st December. Their services on that occasion were acknowledged by the Commander-in-Chief in the following words: "The conduct of the Pioneers under Captain McCraith was highly meritorious and essentially useful." A complimentary order was also issued by the Governor-General, dated Camp at Oochar, 1st January 1818.

The relief of the Fort at Nowlgoond in December by that part of the reserve division under the immediate command of Brigadier Thomas Munro, and the capture of the Forts at Gudduk, Dummul, and Hoobly by the same officer in January 1818.

The assault and capture of the fortress of Badami on the 17th February by the same officer, on which occasion the conduct of the Pioneers was thus favorably noticed by the Commander-in-Chief:—

1817.
Mahratta war.

Battle at Nagpore and
capitulation of that
city.

Battle of Mahidpoor.

Relief of Nowlgoond.

1818.

Capture of the fortress
of Badami and other
Forts by Brigadier-
General Munro.

*Head Quarters of the Army of the Deccan, Camp at Bizapore,
Friday 13th March 1818.*

"The expression of His Excellency the Commander-in-Chief's approbation and applause is also due to * * * and the detachment of Madras Pioneers for the admirable spirit and coolness they evinced in the attack."

The assault on the Fort at Talnair on the 27th February by the division under General Hislop, from whose order
Capture of Talnair. on the occasion the following is an extract :—

"The conduct of the Pioneers during the whole of their arduous duties in the attack of yesterday was such as to call forth the highest approbation of the Commander-in-Chief, and His Excellency offers to Captain McCraith, commanding the Pioneers, his warmest acknowledgments for his own distinguished and exemplary conduct, as well as to the whole of the Officers, Non-Commissioned, and Privates of the corps."

The capture of Singhur by the detachment under Brigadier-General Pritzler, which was thus acknowledged in General Orders by the Commander-in-Chief :—

"The Fort of Singhur having surrendered to Brigadier-General Pritzler's detachment on the 2nd instant, His
Capture of Singhur. Excellency the Commander-in-Chief congratulates that officer and the gallant troops under his command on the possession of so strong a fortress with so little loss.

* * * *

"The conduct of the Artillery, Pioneers, and troops in general was highly praiseworthy, and the Commander-in-Chief notices with much satisfaction the commendation which Brigadier-General Pritzler has bestowed on them for their zeal and cheerfulness on all occasions."

The surrender of the Forts of Jeypoor, Vizierghur, and Poorunder
Surrender of Jeypoor, &c. to the detachment under the same officer on the 12th, 15th, and 16th March respectively.

The surrender of Gokauk on the 9th March to the detachment of the reserve division under Brigadier-General Munro, and the siege of the Fort of Belgaum by the same detachment from the 20th March to the 10th April, on which day it capitulated.
Capture of Gokauk. Capitulation of Belgaum.

• The reduction of Wasota on the 7th April by Brigadier-General Pritzler's detachment, which rejoined General Munro on the 22nd idem.
Reduction of Wasota.

*

The capture of the hill fort of Unkye-Tunkye on the 3rd April, the siege of Rajdair on the 11th and 12th idem, and that of Trimbuick on the 23rd and 24th, on the fall of which last-mentioned place seventeen other hill forts in Candeish surrendered without resistance.

Reduction of hill forts in Candeish by the force under Lieut.-Colonel A. McDowall.

The assault and capture of the pettah at Sholapoor by the reserve division on the 10th May, and the siege operations at the same place from the 12th to the 15th idem, when the garrison in the fort capitulated.

Assault of the pettah at Sholapoor and capitulation of the fort.

The surrender of Paughur to the same division on the 8th August, by which the reduction of the territories of the Peishwa was completed.

Surrender of Paughur.

The siege of Chanda by the Nerbuddah division under Lieutenant-Colonel Adams, C.B., from the 10th to the 20th May, on which day the place was stormed and carried. The following is an extract from the order issued on the occasion by the Governor-General, dated at Goruckpore, 18th June 1818:—

Storm of the city of Chanda.

"Lieutenant-Colonel Scot* of the Madras establishment, who guided the assault, displayed a courage no less calmly capable of perceiving and securing every advantage than it was brilliant. His success demonstrates how judiciously his valor was applied. He appears to have been worthily supported by the intrepidity of Lieutenant-Colonel Popham and Captain Brook, who led the right and left columns of attack. In noticing this part of the day's achievement, the Governor-General should not forget the animated exertions of Lieutenants Bevan† and Fell,‡ commanding the Pioneers."

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The siege of the Fort at Mulligaum by the force under Lieutenant-Colonel A. McDowall from the 18th May to the 13th June, when the garrison surrendered. An attempt was made to carry the place by assault on the 29th May, but the breach was found impracticable. Lieutenant Nattes, of the Engineers, was mortally wounded after having mounted the breach at the head of the storming party. Three Privates of the Pioneers were killed, and 1 Havildar, 1 Puckally, 1 Naigue, and 12 Privates wounded.

Siege and capture of Mulligaum.

* Major-General Sir R. Scot, K.C.B.

† Madras Pioneers.

‡ Bengal do.

Revision of
establishment.

The establishment of each battalion of Pioneers was again revised during the year and fixed as follows :—

Captains	...	...	...	...	...	...	2
Lieutenants	...	...	...	...	...	...	5
Ensign	...	...	...	...	...	...	1
Adjutant	...	...	...	...	...	...	1
Assistant Surgeon	...	...	...	...	...	...	1
Serjeant-Major	...	...	...	...	...	...	1
Jemadars	...	...	...	...	...	...	8
Havildars	...	...	...	...	...	...	24
Puckallies	...	...	...	...	...	...	8
Naigues	...	...	...	...	...	...	24
Privates	...	...	...	...	...	...	700

Attached to the Battalion

Recruit Boys	...	...	...	...	...	30
Pensioned Boys	...	...	...	...	...	30
Native Dressers	...	...	...	...	...	2
Vakeel	...	...	...	...	...	1
Conicopolies	...	...	...	...	...	2
Maistry	...	...	...	...	...	1
Do. Bricklayers	...	...	...	...	...	2
Stone-cutters	...	...	...	...	...	3
Carpenters	...	...	...	...	...	4
Smiths	...	...	...	...	...	4
Hammermen	...	...	...	...	...	4
Bellows Boys	...	...	...	...	...	4
Puckallies	...	...	...	...	...	2
Toties	...	...	...	...	...	2

Detachments of Pioneers were present at the reduction of Jilpy Aumnair on the 12th January 1819, and at the two sieges, with which the war may be said to have terminated, viz., those of Asseerghur and Copauldroog. The siege of Asseerghur commenced on the 17th March and ended on the 9th April 1819. The pettah was carried by assault on the 18th March and preparations were made for storming the lower Fort on the 29th, but it was evacuated during the night. The garrison of the upper Fort surrendered on the 8th April, and the place was taken possession of the next day. One Havildar and 15 rank and file of the Pioneers were wounded during the operations.

1819.
Capture of the
Fortresses of
Asseerghur and
Copauldroog.

The siege of the hill fortress of Copauldroog commenced on the night of the 8th May. The lower Forts surrendered on the 11th and the upper Fort was carried by assault on the 13th idem. Captain Smithwaite and the Pioneers were thanked by Brigadier-General Pritzler for their unwearied exertions during the siege. One Private was killed and 7 Privates wounded.

A detachment was present at the assault of the outwork at Rarree in the Sawunt Waree country on the 13th February by the force under Major-General Sir W. Grant Keir, on which occasion 1 Private was killed and 1 Private wounded.

Soon after the termination of the war, recruiting for the corps of Pioneers was suspended, and the battalions consequently fell considerably below their proper strength; but early in 1821, on the strong recommendation of Sir Thomas Munro for the reasons assigned in the following Minute, the Government resolved to keep the corps complete :—

Suspension of recruiting for the Pioneers.

Minute by Sir Thomas Munro and Resolution of Government to keep the corps complete.

Minute by Sir Thomas Munro, dated 30th January 1821.

The report of the Quartermaster-General, dated the 18th instant, exhibits in so clear and forcible a manner the useful services of the corps of Pioneers, and the inconvenience that must result from any diminution of its strength, that I have no hesitation in recommending to the Board that the order for suspending the recruiting of that corps be withdrawn and it be kept complete.

It will be seen from the distribution statement transmitted by the Quartermaster-General that the greater part of the Pioneers are employed under the orders of the Supreme Government with the different subsidiary forces in advance, and that within our own frontier we have only two companies, the whole of which, with the exception of the small party doing duty in the cantonment of Bangalore, are employed in opening the Periah Ghaut between Mysore and Malabar.

We have no inland navigation, and the only communication therefore between the coast and the interior, whether for military or commercial purposes, are the different passes, which are at all times difficult and often impassable from want of timely repair. Had we no use for Pioneers with our armies, it would still be necessary to keep them up in order to repair these passes as public works essential to the trade of the country, for if we did not we should be obliged to have recourse to common laborers, who, from their want of skill, would be much more expensive. But the services of the Pioneers are applicable not only to the important works of opening and repairing passes, but to the construction of roofs and temporary buildings at all our military stations, which would otherwise

be executed at a greater expense by the Engineer Department. The Pioneers are at all times productive laborers. They are never idle, and as the work on which they are usually engaged could not be executed so cheaply by any other class of laborers, there would be no economy in reducing their number. The communications must be kept open between the countries on the east and west coast and those above the ghauts; and if we have not Pioneers, it must be done by common laborers and the lower class of cultivators drawn together from a distance, and most frequently by compulsion, to work among unhealthy jungles where many of them lose their lives, and where their labor after all is much more expensive from their want of the necessary skill than that of Pioneers. Considerations therefore of humanity, as well as of economy urge the propriety of maintaining the Pioneer corps at their full establishment.

(Signed) THOMAS MUNRO.

The Board concur in the opinion of the President on the useful services of the corps of Pioneers and on the inconvenience which would result from any diminution of its strength.

Resolved accordingly that the recruiting of the Pioneers, which was suspended on the 17th July 1819, be continued, and that the corps be kept complete.

The 1st Battalion of Pioneers embarked at Madras in April 1824 with the first division of the troops composing the expedition to Burmah, and landed at Rangoon on the 11th May, being then 552 strong, officers included. The spirit by which this battalion, in common with the rest of the Madras Native Army, was actuated, was brought to the notice of the Governor-General by Sir Thomas Munro in a letter dated 22nd May 1824, from which the following is an extract:—

"We have got the Pioneers, whom I did not expect so soon; they have been enabled to join only by very extraordinary exertion. A detachment of them from the neighbourhood of Hyderabad has marched at the rate of 25 miles daily for 15 days, without a halt, at the hottest time of the year. Our sepoy battalions have embarked without a man being absent. Their conduct has been highly meritorious; no European could have evinced more readiness to go on foreign service than they have done."

The battalion was engaged in the attack on the fortified camp and stockades at Kemmendine on the 10th and 11th June, and at the capture of the stockades near Dallah on the 8th July, when three were taken by

the column under the immediate command of Sir Archibald Campbell, and seven by that under Brigadier-General MacBean. These last were all taken by escalade, the Pioneers being very forward throughout, and advancing to place the ladders against the second large stockade without waiting for a covering party.

A party was employed with the detachment under Lieutenant-Colonel Kelly of the Madras* European Regiment, by which two stockades in the Dallah creek were taken on the 8th August.

On the 22nd September the stockades near Pagoda Point beyond Kemmendine, were taken by a detachment under Brigadier-General H. Fraser, on which occasion the Pioneers were employed. General Fraser, in his report dated 27th September, speaks of the troops in the following terms :—"Major Sale and all the officers and men, both

Stockades near Pagoda Point.

Europeans and Natives, evinced the utmost zeal and spirit in the performance of every duty required from them, and endured their fatigues

with the utmost cheerfulness. The native troops I beg particularly to notice, who, for the space of four days, had few opportunities of dressing any food."

On the 5th October a detachment composed of 800 men, taken from the 3rd and 34th Regiments of Light Infantry, and 40 Pioneers under Captain Milne, were sent against

Kykloo under Lieutenant-Colonel Smith, C.B. The stockade at Todagabe was carried by escalade the same day. On the evening of the 7th, after having stormed a succession of breast-works, the detachment came in front of the stockade at Kykloo, and being repulsed with some loss it fell back. Captain Moncrieffe and Lieutenant and Adjutant

Campbell of the Pioneers were wounded on this occasion. On the 9th October a reinforcement

under Brigadier McCreagh was sent out, which occupied Kykloo without opposition, and then destroyed a large stockade and a village beyond it. The Pioneers were mentioned by Brigadier McCreagh in the following words :—"The effective exertions of the Madras Pioneers under Captain Milne attracted the notice of every one."

On the 8th October Major Thomas Evans, H.M. 38th Regiment, was sent with a detachment against the fortified village of Thantabain, which was carried without

loss. The following extract is taken from Major Evans' report :—"I cannot close my report without mentioning the very meritorious services of Brevet-Captain Wheeler and the detachment of Pioneers that accompanied me. Their prompt and ready zeal in situations of difficulty and danger was not less conspicuous than their indefatigable

* Afterwards the Madras Fusiliers; now H.M. 102nd Regiment.

exertions in performing other parts of their laborious duty, and the very gallant style in which they repeatedly dashed forward with scaling ladders was as honorable to themselves as it was a gratifying mark of faith and confidence in the troops employed."

The Pioneers were engaged in the attacks on Bundoolah's army in front of Rangoon during the first week of December, which terminated in his defeat on the 7th idem.

The following is an extract from Sir Archibald Campbell's order on the occasion, dated 8th December 1824 :—

"The conduct of Captain Wheeler and the Madras Pioneers is justly a theme of praise to every officer they are placed under."

On the night of the 8th December a party of Pioneers accompanied a detachment under Major Ferrier of the 43rd Regiment Madras Native Infantry, which surprised the enemy at Dallah, driving them from their trenches and taking ten guns.

The battalion was engaged in the attack and capture of the strong stockades at Kokain on the 15th December, when the enemy were defeated with great loss. Captain Wheeler and Lieutenants Macartney and Campbell of the Pioneers were wounded in this action, and the former was favorably noticed in the order issued to the army by the Governor-General in Council on the 24th December.

The enemy having re-occupied the old Portuguese fort and factory at Syriam, a detachment of H.M. 47th Regiment, with parties of Seamen, Marines, and Pioneers, were sent to dislodge them, which service was performed on the 11th and 12th January 1825. Ensign McLeod of the Pioneers was wounded on this occasion.

In February of this year two companies, each of the undermentioned strength, were added to each battalion, as a temporary measure :—

1 Subaltern.	1 Puckally.
1 Jemadar.	4 Naignes.
3 Havildars.	97 Privates.

An additional number of artificers was also allowed to each battalion at the same time, viz. :—

1 Carpenter.	1 Hammerman.
1 Smith.	1 Bellows Boy.

On the 7th March the water column under Brigadier-General Willoughby Cotton, and to which a party of Pioneers was attached, attacked the outworks at Donabew and carried the Pagoda stockade; but being unsuccessful in

the attempt upon the next work, the troops re-embarked and the flotilla dropped down the river to await reinforcements. Sir Archibald Campbell, on receiving this intelligence, returned to Donabew, where he arrived with the land column on the 25th March. The batteries opened fire on the 1st April, and the Fort was evacuated the same night. The army then moved forward to Prome

Occupation of Prome.

and occupied that place without opposition on the 25th April.

On the 5th May a force under Lieutenant-Colonel Godwin, H.M. 41st Regiment, accompanied by a body of Pioneers, was sent to explore the country in the direction of Tonghoo, and returned on the 24th of the same month after having made a circuit of 139 miles. The army remained at Prome until the end of the year, first on account of the rains in June, July, and August, and afterwards owing to an armistice for one month, the terms of which were agreed upon on the 16th September. The 1st Battalion of Pioneers suffered much from sickness

Sickness in the 1st Battalion.

at this time, as it appears from a present state of the Army, dated at Prome on the 18th August, that out of 542 rank and file 133 were in

hospital, being at the rate of 24½ per cent.

The rates in the European and Native Infantry on the same date were very much less, viz., 11·30 and 14·55 per cent. respectively. This difference in all probability was owing to the severe and laborious nature of the duties performed by the Pioneers.

The battalion was engaged in the actions at Simbike and Nepadee near Prome on the 1st, 2nd, and 4th December. Lieutenant J. Smith was dangerously wounded on the first of those occasions.

On the 19th January 1826 the fortified and entrenched city of Melloon was attacked and carried. Sir Archibald Campbell, in his report to the Supreme Government, dated 20th January, thus mentions the Pioneers: "I

1826.

Capture of Melloon,

ordered the construction of batteries, and the landing of heavy ordnance from the flotilla to commence immediately after midnight, and every requisite arrangement to be made for an early attack upon Melloon. His Lordship in Council will be enabled to appreciate the zeal and exertion with which my orders were carried into effect under the direction of Lieutenant-Colonel Hopkinson commanding the Artillery, and Lieutenant Underwood, the Chief Engineer, aided by that indefatigable corps, the 1st Battalion Madras Pioneers, under the command of Captain Crowe, when I state that by 10 o'clock the next morning I had eight and twenty pieces of ordnance in battery on points presenting a front of more than one mile on the eastern bank of the Irrawaddy, which

corresponded with the extent of the enemy's line of defence on the opposite shore."

Action at Pagahm-mew
and capture of the
city by storm.

After the capture of Melloon the army advanced to Pagahm-mew, and on the 9th February defeated the enemy near that place and stormed the city on the same day.

A party of the corps was present with the detachment under Lieutenant-Colonel Conry, which was repulsed at the attack of the stockade at Sittang on the 7th January, and also at the successful attack on the same place by Lieutenant-Colonel Pepper on the 11th idem.

Peace was concluded on the 24th February, and shortly afterwards the services of the Pioneers were acknowledged by the Governor-General in the following words:—

"The Governor-General in Council acknowledges, with peculiar approbation, the gallant and indefatigable exertions of that valuable corps, the Madras Pioneers, under Captain Crowe."

Thanks of the Governor-General.

In the year 1823 the Court of Directors issued orders for the reduction of one of the two battalions of Pioneers, and directed that the remaining battalion should be officered from the corps of Engineers. The following reasons were assigned by the Court for the proposed change:—

Conversion of the 1st
Battalion of Pioneers
into a Corps of
Sappers and Miners.

"It is obvious that the utmost advantage cannot be derived from the labor of Pioneers unless it be scientifically directed, and consequently that it would be for the interest of the service that the whole of the Pioneers should be put under the command and direction of officers of Engineers regularly instructed in the art of sapping and mining, making pontoons and bridges, roads and surveys, fortifications and other buildings. We have for many years, with equal care and success and at a great expense, educated young men for these purposes at Addiscombe, and it seems to be high time that we should reap the benefits derivable and expected from that institution.

"We therefore direct that the Pioneers be transferred to the Engineers, and the officers of the line at present attached to them returned to their respective corps."

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"One battalion of Pioneers will, in our opinion, be sufficient under this arrangement, and we therefore direct that our former orders for disbanding the second battalion be carried into effect."

At the time of the receipt of this despatch the corps of Engineers was so weak that it could not spare officers for the Pioneers without

great detriment to the public service, for which reason Sir Thomas Munro, then Governor of Madras, strongly advocated the maintenance of both battalions upon the existing footing for the time being, but as he anticipated the most beneficial results from eventually converting one battalion into "Sappers and Miners," he recommended that a party of Non-Commissioned Officers, duly instructed at Chatham under Colonel Pasley of the Royal Engineers, should be procured from England.

The Court acceded to the postponement of the fulfilment of their orders, and these were not carried out until 1831,

1831.

early in which year one Serjeant, one Second Corporal, and eight Private Sappers arrived from Chatham. About the same time the services of several officers of Engineers became available owing to the discontinuance of the forces in the Doab and in Travancore; and the subject of the reorganisation of the Pioneers was again taken into consideration by Government.

Lieutenant-General Sir George Walker,* G.C.B., then Commander-in-Chief, opposed the proposed change in a Minute dated 7th February 1831, on the ground that the corps of Engineers could not, in his opinion, supply commissioned officers in sufficient numbers to preserve interior economy and discipline, and also because he assumed that the corps, as newly constituted, would cease to be under the immediate control of the Commander-in-Chief.

As Sir George Walker, in his Minute above specified, took occasion to speak very highly of the corps of Pioneers, the following extracts therefrom are here given :—

"They have now been in existence as distinct and separate battalions for a great number of years, and during that period they have shared in every active service that has gone forward. In the Ava war they may be said to have essentially contributed to the success of our arms. The constitution of the corps as it at present stands I consider to be hardly capable of improvement.

His recognition of the value of the services of the corps of Pioneers.

* * * *

"The experience of the last 25 years will best vindicate the constitution and establishment of the Pioneer corps. They have ever been mentioned in terms of the highest commendation, and in Ava particularly their conduct was beyond praise.

* * * *

"If they are required for the siege of any fortified position the details that are necessary for the service are placed at the disposal of the

* Commanded the 7th Division at the battle at Orthes in February 1814.

Engineers, and when the service is concluded they are returned to head-quarters. When I know therefore, from my own experience, how much military success depends upon the personal intrepidity of these men, I naturally come to the question with feelings of no trifling interest. The escalade of every fortified post (in this country) must depend upon the gallantry of the Pioneers. No substitute can be furnished to carry scaling ladders where it is so necessary to preserve the European soldier for actual conflict, and I repeat again that upon this corps success must naturally depend. It is therefore to be hoped that no arrangement will be sanctioned by Government which will deprive the Commander-in-Chief of the management and control of so important a part of the Military body, and without which he cannot be responsible for the efficiency of the army.

* * * *

"I am only anxious that their present establishment should continue undisturbed, and that the corps, as regards their interior economy and discipline, shall remain in their present state of perfect efficiency.

* * * *

"Under all these circumstances, therefore, I am induced to express an earnest desire that Government will preserve this fine corps to the Madras Army. They have a spirit amongst them which, if once injured, may never be restored, and with their present officers to conduct them, they have invariably evinced an intrepidity on service which has deservedly placed them so high in the estimation of Government."

The difficulties anticipated by Sir George were surmounted, and on the 19th April it was resolved by Government that the 1st Battalion of Pioneers should be converted into a corps of Sappers and Miners and officered from the corps of Engineers, and that the men should be regularly instructed in mining, sapping, and pontooning, and all other duties which engineer-soldiers have to perform in time of war. This resolution was promulgated in the following order:—

Fort St. George, 24th May 1831.

"The Right Honorable the Governor in Council is pleased to direct that the first battalion of Pioneers shall be converted into a corps of Sappers and Miners, and that it shall be commanded by an Officer of Engineers, with an Adjutant and such other officers of the corps of Engineers as can be conveniently spared for that purpose.

"2. The European Sappers and Miners lately arrived from England to be attached to the corps as Non-Commissioned Officers.

Establishment of the
"Sappers and
Miners."

"3. The following establishment is accordingly fixed for the corps of 'Sappers and Miners,' which will consist of eight companies:—

Establishment.

Captain Commanding	...	...	...	...	...	1
Subalterns	...	...	...	...	...	8
Assistant Surgeon	...	...	...	...	...	1
Non-effective Staff—						
Adjutant	...	...	...	...	...	1
Serjeant-Major	...	...	...	...	...	1
Quartermaster Serjeant	...	...	...	...	...	1
Serjeants	...	...	...	...	...	8
Natives—						
Jemadars	...	...	...	...	...	8
Havildar-Major	...	...	...	...	...	1
Havildars	...	...	...	...	...	24
Naigues	...	...	...	...	...	24
Privates	...	...	...	...	...	640
Recruit and Pension Boys	...	...	...	...	...	48
Puckallies	..	...	...	...	...	8
Pay Havildars (Non-effective)	...	...	...	...	...	8
Assistant Apothecary	...	...	...	...	...	1
Second Dresser	...	...	...	...	...	1
Toties	...	...	...	...	...	2
Vakeel	...	...	...	...	...	1
Bazaar Servants—						
Choudry	...	...	...	...	...	1
Cooly Maistry	...	...	...	...	...	1
Bullock Maistry	...	...	...	...	...	1
Peons	...	...	...	...	...	2
Artificers—						
Carpenters	...	...	...	...	...	5
Smiths	...	...	...	...	...	4
Hammermen	...	...	...	...	...	4
Bellows Boys	...	...	...	...	...	4

"4. The Commanding Officer and Adjutant of Sappers and Miners, and Officers commanding companies, are authorised to draw the same staff pay and allowances as Officers of Pioneers of corresponding rank.

"5. The pay of the European Non-Commissioned Staff of the Sappers and Miners is fixed as follows:—

			RS.	A.	P.
Serjeant-Major ...	{	Pay ...	35	0	0
		Batta ...	8	7	0
		Staff Pay ...	14	0	0
Per Month ...			57	7	0
Serjeant ...	{	Pay ...	28	11	10
		Batta ...	8	7	0
		Per Month ...	37	2	10

"6. The corps of Sappers and Miners will be entitled to the benefit of the non-effective establishment to share in prize-money, to compensation in lieu of rice, &c., on the same terms as other branches of the Army.

"7. Mess tent allowance, peace and field, will be drawn by the corps of Sappers and Miners the same as for a battalion of Pioneers.

* * * *

"9. The same allowance on account of a Regimental School authorised for the Pioneers is sanctioned for the Sappers and Miners.

"10. The Sappers and Miners to be placed under the immediate control of the Chief Engineer, who will communicate direct with Government on all subjects connected with its employment; the discipline and economy of the corps to be directed by His Excellency the Commander-in-Chief.

* * * *

"12. Captain Lawe of Engineers is appointed to command the corps of Sappers and Miners, and Lieutenant Lawford to be Adjutant.

"13. The following Subaltern Officers are posted to the corps of Sappers and Miners, viz. :—

1st Lieut. Stafford Vardon.	2nd Lieut. Henry Watts.
" " Jasper Higginson Bell.	" " John Parry Power.
" " Frederick Ditmas.	" " Thomas Smythe.
2nd " John Clarke Shaw.	

"14. The regiment to be clothed as Engineers on the next issue of clothing.

"15. The computations of off-reckonings for the corps of Sappers and Miners to be the same as the corresponding ranks in the Pioneers, the amount of which will be carried to the General Off-reckoning Fund.

"16. The foregoing orders are to take effect from the 1st July next."

In December the C and G Companies of the Sappers and Miners embarked for Malacca under Lieutenants Watts and Smythe, and were employed with the field force under Lieutenant-Colonel Herbert in 1832.

1832.

Field service in Malacca.

During this severe and harassing service the detachment was present at the assault and capture of the stockades at Sungei-puttye on the 17th March; of those at Kalama on the 25th idem; of the works at Bookit-si-Boorsoo on the 25th May; and of the stockades at Taboo on the 15th June, by which last event the war was brought to a successful termination.

In July 1832 the head-quarters of the corps, and the A and F Companies embarked to join the force in Malacca and reached Penang on their way, but returned from that place to Madras in August, their services not being required in Malacca.

In June 1833 a despatch was received from the Court of Directors ordering the reduction of "the establishment of Sappers and Miners, or of Pioneers, whichever they might be called," to one battalion; in conformity with which the remaining battalion of Pioneers was absorbed in the corps of Sappers and Miners in the manner directed in the following order:—

1833.

Incorporation of the 2nd Battalion of Pioneers into the corps of Sappers and Miners.

Head Quarters, Choultry Plain, 27th December 1833.

"Under the sanction of the Right Honorable the Governor in Council, and with reference to the G.O.G. of the 7th June last, the Commander-in-Chief directs that the corps of Pioneers be incorporated into the Sappers and Miners from the 1st February next.

"The European Officers now serving with the Pioneers are to muster and pay their men, and settle all accounts up to the 31st January inclusive, from which date their present employment and pay as Pioneer Officers are to cease, and they will proceed to join their respective corps.

"The Native Officers, Non-Commissioned Officers, Naigues, Privates, Puckallies, Boys, Maistries, and Artificers are to be borne on the returns of the Sappers and Miners as supernumeraries until vacancies occur to bring them upon the establishment, or until otherwise disposed of."

* * * *

"The following distribution of the eight companies of Sappers and Miners is established from the 1st February 1834 in order to give a fair distribution of the command allowance and Pay Havildars:—

Distribution of the corps.

Regimental Head-quarters, Bangalore ...	3 Companies.
Detachment, Neilgherries ...	2 do.
Do. Madras ...	1 do.
Do. Hyderabad Road ...	2 do.

In February and March 1834 a detachment of Sappers and Miners, under Lieutenants Power and Macaulay, served with the force employed on field service in the hill zemindary of Kimeddy, and were included in the thanks of Government conveyed in the order of the 1st July, from which the following is an extract:—

"The Governor in Council has observed with high approbation the exemplary conduct of all the troops employed in this arduous and harassing service, their patient endurance of extraordinary fatigue and privations, and the gallant and resolute spirit with which they executed every enterprise to which they were led by their officers, whose activity and energy have been conspicuous."

Detachments of the corps were employed in the Coorg war of 1834, and served with the head-quarter column under Brigadier Lindsay, the western column under Colonel Foulis, and the northern column under Lieutenant-Colonel Waugh.

The head-quarter column crossed the frontier on the 1st April and arrived before the capital on the 7th idem, having met with little opposition.*

The western column carried several stockades near Stony river on the 2nd and 3rd April, with the loss of 48 men killed and wounded, of whom six were Sappers. The northern column was unsuccessful, having been repulsed at the stockades in the Buck Pass on the 3rd April with the loss of 166 killed and wounded, of whom 17 belonged to the Sappers.

In October 1834 the following order was issued by the Governor-General when granting a medal to Havildar Chokalingum of the Sappers and Miners for distinguished conduct in Coorg:—

Bangalore, 15th October 1834.

"The Right Honorable the Commander-in-Chief having laid before the Council of India the proceedings of a Court of Enquiry assembled at Ootacamund on the 27th ultimo, of which Lieutenant-Colonel King was President, to ascertain the claims of certain native soldiers of the Madras Army reported conspicuous for gallantry during the late operations in Coorg, and it appearing that Havildar Chokalingum of the corps of Madras Sappers and Miners has satisfactorily established pretensions to eminent bravery in the advance of the column under the command of Colonel Foulis, the Governor-General in Council, as a mark of the high sense he entertains of the distinguished conduct

Honorary Medal
conferred on Havildar
Chokalingum for
eminent bravery.

* The Rajah gave himself up on the 10th, and with that event hostilities terminated.

of that Non-commissioned Officer, is pleased to confer upon him an honorary medal, and an increase for life of one-third of his present pay."

In September 1835 Government, to "mark their approbation of the conduct and services" of the troops employed in Kimedý in 1833-34, granted a gratuity to the European officers, equal to one month's pay and allowances, and one month's pay to the Native officers and men of all ranks engaged in the said service.

In December of the same year the Commander-in-Chief having reviewed the Sappers and Miners at Mercara in Coorg issued a highly complimentary order regarding the intelligence displayed by them in the various operations of attack and defence which they executed during the inspection.

In December 1836 the establishment of European Warrant and Non-Commissioned Officers for the corps was fixed by the following order:—

Fort St. George, 6th December 1836.

Establishment and pay of European Warrant and Non-Commissioned Officers of Sappers and Miners. "The Right Honorable the Governor in Council is pleased to fix the following establishment of European Warrant and Non-Commissioned Officers for the corps of Sappers and Miners:—

1 Conductor.	12 Serjeants.
1 Serjeant-Major.	12 First Corporals.
1 Quartermaster Serjeant.	12 Second Corporals.

The pay and batta of the non-commissioned ranks above enumerated are fixed at the same rates as established for the corresponding ranks of Foot Artillery, Second Corporals classing as Bombardiers.

When employed at field practice, or on work of any kind such as road-making, boring, &c., they are further to receive an addition of five annas per diem working pay.

The Conductor is to receive the same pay and allowances as a Conductor of Ordnance.

Men found unfit for the corps of Sappers and Miners, from unsteadiness or other causes, will be liable to removal by authority of the Commander-in-Chief to the Artillery or Infantry, according to the terms of their original enlistment.

The duty of the Conductor now appointed will be the charge of the Quartermaster's Office and Department of the corps."

On the same date an order was issued, by which it was directed that Havildars and Naigues of the corps of Sappers and Miners should,

when pensioned on half-pay, receive an exact moiety of their effective pay in lieu of present rates, and in accordance with the practice in force with the Native troops generally.

During 1836 and 1837 a considerable force under the command of Brigadier-General Taylor, and of which a detachment of Sappers under Lieutenant Smythe formed a part, was employed in the hill zemindary of Gumsur, a service of a most trying nature, owing to the extreme unhealthiness of the district, and the privations to which the troops were exposed. On the successful termination of the operations in March 1837, the detachment, in common with the rest of the force, received the thanks of Government, conveyed in the following words:—

* "The Right Honorable the Governor in Council has observed with high approbation the exemplary conduct of all the troops employed in the late arduous and harassing service, their patient endurance of extraordinary fatigue and privation, and the gallant and resolute spirit with which they executed every enterprise to which they were led by their officers, whose activity and energy have been conspicuous."

1837.
Revision of
establishment.

On the 3rd February 1837 the establishment of the corps of Sappers and Miners was revised and fixed as follows:—

Captain Commandant	...	...	...	...	...	1
Subalterns	...	...	...	...	...	8
Assistant Surgeon	...	...	...	...	...	1
Jemadars	...	...	...	...	...	8
Conductor	...	...	...	...	...	1
Serjeant-Major	...	...	...	...	...	1
Quartermaster Serjeant	...	...	...	...	...	1
Serjeants	...	...	...	...	...	12
First Corporals	...	...	...	...	...	12
Second Corporals	...	...	...	...	...	12
Havildar-Major	...	...	...	...	...	1
Havildars	...	...	...	...	...	24
Naigues	...	...	...	...	...	24
Privates	...	...	...	...	...	640
Recruit Boys	...	...	...	...	...	24
Pensioned Boys	...	...	...	...	...	24
Puckallies	...	...	...	...	...	8
Artificers	...	...	...	...	...	16

* This order is word for word the same as that issued in 1834 with reference to the troops employed in Kinedy; the nature of the service in the two cases was exactly similar.

Bazaar—

Chowdry	...	...	...	...	...	1
Peons	...	...	...	...	...	2

Medical Establishment—

Assistant Apothecary	...	...	...	...	1
Native 2nd Dresser	...	...	...	...	1
Toties	...	...	...	...	2

2. The corps to be armed with light fusils, with a fusil pouch, and buff accoutrements.

The corps placed under the direct control of the Commander-in-Chief.

3. It is to stand in the same relation to the Commander-in-Chief and different Military authorities as a regiment of the line.

Movements will be under the direction of the Quartermaster-General, who will also issue orders regarding work to be performed; the details of such work resting with the Engineer officer in command, that is, certain work being to be executed, the order for its execution will be given by the Quartermaster-General, and the Commanding Officer of the corps or detachment will decide upon the number of the men to be employed and the manner of their employment.

* * * *

Europeans of the Sappers and Miners will be eligible for advancement in the Ordnance and other public departments, and Serjeants attached to the Superintending Engineers of Divisions will in future be selected exclusively from the corps."

Further Revision of establishment.
Introduction of the grade of Subadar.

On the 26th December of the same year the establishment was again revised, and it was then ordered that the corps should consist of six companies, and each company of

1 Subadar.	2 Second Corporals.
1 Jemadar.	4 Havildars.
2 Serjeants.	8 Naigues.
2 First Corporals.	2 Buglers.
120 Privates.	

Forming the following establishment:—

Commandant	...	...	...	...	1
Subalterns	...	...	...	...	8
Assistant Surgeon	...	...	...	...	1
Subadars	...	...	...	...	6
Jemadars	...	...	...	...	6
Conductor	...	...	...	...	1

Serjeant-Major	...	...	...	...	...	1
Quartermaster Serjeant	...	...	...	...	...	1
Serjeants	...	...	...	...	...	12
First Corporals	...	...	...	...	...	12
Second Corporals	...	...	...	...	...	12
Havildar-Major	...	...	...	...	...	1
Havildars	...	...	...	...	...	24
Naigues	...	...	...	...	...	48
Buglers	...	...	...	...	...	12
Privates	...	...	...	...	...	720
Regimental Lascars	...	...	...	...	...	6
Recruit Boys	...	...	...	...	...	24
Pensioned Boys	...	...	...	...	...	24
Puckallies	...	...	...	...	...	6
or						
Bheesties	...	...	...	...	...	12
Artificers	...	...	...	...	...	24
Chowdry	...	...	...	...	...	1
Peons	...	...	...	...	...	2
Assistant Apothecary	...	...	...	...	...	1
Native 2nd Dresser	...	...	...	...	...	1
Toties	...	...	...	...	...	2

Non-effective Staff:—

1 Adjutant.	6 Pay (Orderly) Havildars.
1 Subadar-Major.	6 Staff (Color) Havildars.

This change was very advantageous to the corps, as the number of Native Officers was increased by four and the superior grade of Subadar introduced for the first time. Moreover, the number of Naigues was doubled.

1838.

In February 1838 the following orders were issued relating to the organization and employment of the corps:—

Orders for the
instruction and
employment of the
corps.

1. The head-quarters of the corps to be permanently stationed at Bangalore.

2. Two companies, with their European Officers, to be stationed at head-quarters for the purpose of instruction in sapping and mining and civil engineering.

3. These companies, with their officers, to be relieved biennially, so that the whole corps may pass through its course of instruction once in six years.

4. The remaining four companies, when not employed in military

work, to be placed at the disposal of the Revenue Board for employment on other public works.

* * * *

7. When employed on active field service the officer at the head of the Quartermaster-General's Department will communicate to the Officer Commanding the Sappers and Miners all work properly appertaining to the duty of Pioneers, and the latter will adapt the means at his disposal to attain the object required.

8. Each company to be complete in itself, and to be capable of performing every duty to which it may be liable, either in peace or war, independently of head-quarters, and for this purpose each company to be armed and equipped as in the annexed tables.

9. Every Engineer Officer, on his first arrival in India, to be posted to the Corps of Sappers and Miners, and to join at head-quarters, where he is to do duty until reported by the Commanding Officer to be qualified for detached employment.

*Memorandum of Arms and Tools required for each Company.
To be carried by the Company.*

One Company.	Implements, &c.							Remarks.
	Hooks Bill.	Axes Pick.	Mamoties.	Axes Hand.	Axes Felling.	Axes Broad.	Crowbars.	
1st Section, 30 men ...	30	These sections are thus supplied with tools:— 18 men—18 pickaxes, 12 bill hooks, and 6 felling axes. 8 men—8 mamoties and 8 hand axes. 3 men—3 broad axes. 1 man—1 crowbar.
2nd " "	12	18	8	8	6	3	1	
3rd " "	12	18	8	8	6	3	1	
4th " "	12	18	8	8	6	3	1	
Total ...	66	54	24	24	18	9	3	

All the European and Native Non-commissioned to be armed with fusils.

The 1st Section to be armed with fusils, the other three with pistols, one per man.

Spare Tools to be carried with the Company on a cart or bullocks on service.

Axes, pick	...	...	...	...	...	45
Axes, felling	...	...	...	...	...	9
Axes, hand	...	...	...	...	...	18
Axes, broad	...	...	...	...	...	6
Crowbars	...	...	...	...	...	2
Drag ropes	...	...	...	...	...	4
Hooks, bill	...	...	...	...	...	34
Hammers, sledge	...	...	...	...	...	6
Jumpers	...	...	...	...	...	4
Tamping bars	...	...	...	...	...	4
Mamoties	...	...	...	...	...	33

Artificers.

For one Company {
 1 Carpenter.
 1 Smith.
 1 Hammerman.
 1 Bellows' Boy.

In 1839 the Nawaub of Kurnool having been detected in treasonable designs, a force under the command of Lieutenant-Colonel Dyce, which included a detachment of Sappers and Miners, was sent against him in September. This detachment was present at the action at Zorapore on the 18th October, where the Nawaub was taken prisoner, and the service completed.

The officers serving with the Sappers were Captain Pears* and Lieutenant J. W. Rundall, of the Engineers, and Lieutenant G. S. Dobbie, 39th Regiment M.N.I.

1840.
 First War in China.

The A, B, and F Companies served with the first expedition to China. These companies, or portions of them, were present at the several actions during the war which are specified below, viz. :—

Capture of Tinghai.

The capture of the city of Tinghai in the island of Chusan on the 5th July 1840.

1841.
 Capture of the forts at Canton and surrender of the city.

The attack and capture of the forts at Canton on the 24th May 1841, the surrender of that city on the 27th idem, and the subsequent operations in the neighbourhood up to the 1st June.

The conduct of the two companies employed on this occasion received the warm approval of Major-General Sir Hugh Gough, K.C.B.,

* Major-General Sir T. T. Pears, K.C.B.

commanding the expeditionary force, who communicated the same to the Madras Government in a letter dated 6th June.

Capture of Amoy. The capture of Amoy on the 26th August, on which occasion the Sappers assisted in landing the guns.

Assault and capture of Tinghai. The assault and capture of the city of Tinghai in Chusan on the 1st October. Sir Hugh Gough mentioned the Sappers in his despatch in the following words :—

"The scaling ladders had been brought up on most difficult and rugged heights by the great exertions of the Madras Sappers, and were now gallantly planted under the direction of Captain Pears, who was the first to ascend."

Attack and capture of Chinhai. The attack and capture of the city of Chinhai on the 10th October, and the occupation of the city of Ningpo on the 13th idem.

Occupation of Ningpo. The escalade of the city of Tse-kee on the 15th March 1842, and the assault and capture of the entrenchments near that place on the same day. Sir Hugh Gough, in his report, writes that from Captain Pears, the Commanding Engineer, he received the most zealous support.

Escalade of Tse-kee and capture of entrenchments near that place. The attack and capture of the fortified heights commanding Chapoo on the 18th May, and the assault and capture of that city on the same day. Lieutenant Johnston of the Sappers was wounded on this occasion.

A detachment was on board the fleet on the 16th June, when the forts at Woosung were cannonaded and destroyed.

Occupation of Shanghai. It then landed and accompanied the column under Lieutenant-Colonel P. Montgomerie, Madras Artillery, to Shanghai, which city was taken possession of without opposition.

Assault and capture of Chin-Keang. The capture by assault of the city of Chin-Keang on the 21st July, after which the army proceeded to Nankin, where it landed during the 11th, 12th, and 13th August, and preparations were made for assaulting the city, when hostilities were suspended, and on the 29th of the same month the treaty of peace was signed and ratified.

The following is an extract from the order issued by the Governor-General in Council on the conclusion of the war, dated at Simla, 14th October 1842 :—

"On that occasion,* as on all others, the Madras Artillery and Madras Sappers and Miners maintained the high reputation which has always been attached to their respective corps in the Madras Army."

* The capture of Chin-Keang on the 21st July 1842.

On the 22nd September 1843 an order was issued by the Governor-General in Council, granting honorary distinctions to certain corps of the Madras Army for services performed in China, and the A, B, and F Companies of the Corps of Madras Sappers and Miners then received permission to bear upon their appointments a golden dragon wearing an imperial crown, and also the word "China."

On the 10th March 1843 the Marquis of Tweeddale, then Commander-in-Chief of the Madras Army, published a despatch from Sir Hugh Gough, acknowledging in the handsomest manner the services of the Madras troops which had formed part of the expeditionary force in China, and from that despatch the following is an extract :—

Singapore, 1st January 1843.

"MY LORD MARQUIS,

*

*

*

*

"3. I cannot part with the Madras troops without expressing to your Lordship in Council the entire satisfaction which I have derived from their conduct on all occasions in the field and in quarters. * * *

"6. The Artillery and Sappers and Miners deserve more particular mention, as they joined me in the Canton river in March 1841, and have borne a gallant part on every occasion when the enemy was in the field throughout the whole war. In mentioning to the Governor-General of India the respective commanding officers, I have specially noticed Lieutenant-Colonel Montgomerie and Captain Pears, from whom, in their capacities of Brigadier of Artillery and Commanding Engineer, I uniformly derived the most zealous and efficient assistance."

The number of Sappers and Miners who embarked at Hong-Kong in December 1842 to return to Madras on the breaking up of the force was

1 Captain.	14 Havildars.
6 Subalterns.	22 Naigues.
5 Native Officers.	2 Drummers.
	240 Privates.

The officers who served with them during the war were Captains T. T. Pears, Lieutenant and Brevet Captain F. C. Cotton, and Lieutenants J. W. Rundall, J. Ouchterlony, and H. H. Hitchins, all of the Corps of Madras Engineers. Captain Cotton and Lieutenant Rundall were both severely wounded. The former was the senior officer of Engineers during the operations at Canton in May 1841, and was thanked for his services on that occasion. Sir Hugh Gough at the same time announced his intention of recommending him for a Brevet Majority on



his attaining the rank of regimental captain. Captain Cotton was also thanked for his services at the capture of Amoy.

Subadar Major Comarsawmy, Native Aide-de-camp to Sir Hugh Gough, particularly distinguished himself, and was brought to the notice of the Governor-General.

The C Company served in Scinde and in Affghanistan from the end of 1840 until the 25th March 1844, when it embarked at Karatchee for Bombay, and returned to the Madras Presidency in May. The following order of the Commander-in-Chief of the Madras Army, dated 9th May 1844, enumerates the services of this company during the period referred to :—

"The C Company of Sappers and Miners, under the command of Captain Henderson, having disembarked at Cannanore, the Most Noble* the Commander-in-Chief desires to offer to both officers and men his most cordial congratulations on their return to their own Presidency after their long and highly honorable service in Scinde.

"The C Company of Sappers and Miners was ordered from Belgaum to Scinde in November 1840, and shortly after its disembarkation at Karatchee proceeded to join the force at Quetta, a distance of about 500 miles.

"Under the command of Lieutenant Outlaw of the 26th Regiment M.N.I., the company, then having with it not more than 46 fire-locks, deliberately marched through the Bolan Pass, and, after reaching Quetta, was occupied in various military works until the close of 1841, when it again moved into the low country.

"Its head-quarters were then stationed at Dadur, while detachments were sent out in all parts of the country from Seebee to Karatchee. In April 1842 the company again ascended the Bolan Pass and was employed in constructing fortifications at Quetta, from which a detachment, having been sent forward with the troops under Major-General England, joined Major-General Nott's force at Candahar. In September the company retired from Quetta with Major-General England, and subsequently joined the force under Major-General Sir Charles Napier, under whose command it was engaged in the destruction of the fort of Imamghur, in the battles of Meanee and Hyderabad; serving in the first as infantry of the line; and at the capture of Omerkote.

The detachment left with Major-General Nott at Candahar, after having been engaged in the second affair at Hykulzie under Major-General England, was

* The Marquis of Tweeddale.

employed at Kelat-i-Ghilzie, in the operations at Candahar, in the action with Shems-ool-Deen Khan, at Ghuznee, at Cabul, and in the movement through the Khyber Pass. It reached Ferozepoor on the 23rd December 1842, and marched again on the 5th January 1843 with "Leslie's" troop of Horse Artillery to Sukkur.

"From Sukkur it proceeded in boats to Hyderabad, which place it reached on the 3rd March, and was present with the rest of the company at the battle of Hyderabad.

"These services have been already honorably noticed by the distinguished officers under whom this gallant little band has been principally employed, more especially by His Excellency Major-General Sir Charles Napier G.C.B., and the Commander-in-Chief has great pleasure in placing on the records of this army the following extracts from Sir Charles Napier's despatches and other documents:—

Despatches from Major-General Sir Charles Napier.

Meanee, 18th February 1843.

"Captain Henderson, of the Madras Engineers, took a standard, and did good service with his excellent little band of Sappers and Miners, not only in this engagement, but through the campaign. His Lieutenants Boileau and Outlaw have also distinguished themselves."

Extract from despatch
of Sir Charles Napier.

Dubba, near Hyderabad, 24th March 1843.

"Nor must I omit to mention the labors of Captain Henderson and Lieutenants Outlaw and Boileau, with their hardy little band of Sappers, whose labors enabled the heavy 8-inch Howitzers to come up into action."

From Lieutenant-Colonel Leslie, C.B.

Camp Hyderabad, 23rd October 1843.

"I do hereby certify that Jemadar Amaraputty of the 3rd Company, Madras Sappers and Miners, was in charge of a party of 30 men of the above company serving in Afghanistan, and was for a long time attached to the troop under my command, and marched with his party at the head of the troop through the whole of that difficult country. I have considered it a point of duty to give the Jemadar (who was then only a Havildar) this certificate as a record of my high opinion of his services and zeal. I have never met a more willing or efficient man. He and his sturdy and hardworking comrades were ever ready and always successful in making a road for the guns over the most difficult ground, and, having their tools always in their hands, their work was never delayed. In short I am anxious to bear testimony to the unwearied zeal of the whole party, and wish them success with all my heart."

Service rendered by
Jemadar Amaraputty.

*General Orders by His Excellency Major-General Sir C. J. Napier, G.C.B.,
Governor of Scinde.*

Head-quarters, Kurrachee, 25th March 1844.

Order by Sir Charles
Napier on the
departure of the C
Company from Scinde.

Captain Henderson and Officers, Non-commissioned Officers, and Privates of the Madras Sappers and Miners. You have earned laurels in Scinde. No troops have more honorably conducted themselves. Associated in all the glories of the Bombay Army, you leave this country regretted by your companions. You have served under my immediate command for a year and a half. Your labors during our march into the desert were greater than those of any other troops, and were undergone with spirit. You did your duty bravely in the battles of Meanee and Hyderabad. In the former of these two actions you were conspicuously placed, and nobly acquitted yourselves. I regret to lose you, but justice to you after your hard service, has made me send you to your own homes, where an honorable reception awaits you. Go where you will, you will be attended with my sincere regards and my heartfelt respect. To my friend Captain Henderson I have given a letter for the Commander-in-Chief of the Madras Army that his Lordship may be aware of your worth.

"To these most honorable testimonials the Commander-in-Chief can only add this public expression of his Lordship's acknowledgments to both officers and men for the admirable manner in which they have maintained the reputation of their own distinguished corps, as well as of the army to which they belong, and for the additional proof which they have thus afforded, that wherever their services are called for the Madras Sepoys will never fail to merit fresh distinction as brave and faithful soldiers.

"This order to be translated and read on parade to every native corps and detachment of the Madras Army."

(Signed) C. A. BROWNE,
Acting Adjutant-General of the Army.

This company bears upon its appointments the words "Meanee," "Hyderabad," 1843, under the authority of an order by the Governor-General in Council, dated at Agra, 11th April 1843.

The following is an extract of a letter from Sir Charles Napier, dated 14th July 1849, in which he makes honorable mention of Subadar Tondroyen of the Sappers.

Distinguished conduct
of Major Henderson
and Subadar
Tondroyen at
Meanee.

"At the battle of Meanee Subadar Tondroyen led his company most gallantly down into the bed of the Fullailee; he followed Major Henderson, his commanding officer, who for that gallant action received the Companionship of the Bath. At this time, the post where

these two brave men led was about the most dangerous part of the field. I saw with admiration the boldness of the behaviour of the company and its commander, and the Subadar was at his side on all occasions.

"This old warrior's courage, energy, and great bodily exertions excited my admiration, and Major Henderson can confirm my opinion of him. If I am entitled to the red ribbon of the Bath, he is to the order of merit."

The late Lieutenant-General Sir James Outram, in a letter dated at Lucknow on the 4th April 1858, spoke of this company as follows:—

* * * *

"Upwards of fifteen years ago I knew the C Company, Madras Sappers and Miners, in Affghanistan, and I then considered them a model body of soldiers, and most assuredly they have not deteriorated since then."

Two companies of the corps embarked from Madras on the 31st March 1852 under Captain J. W. Rundall of the Engineers as part of the second expedition against Burmah, and were present at the capture of Martaban on the 5th April. On the 8th April they were joined at the mouth of the Rangoon river by two companies under the command of Lieutenant B. Ford, 12th Regiment M.N.I. The force landed near Rangoon on the 12th April, and the White House stockade was taken that day. On the 14th the Shui Dagon Pagoda was stormed and taken, and the city of Rangoon fell. Captain Rundall and Lieutenant Ford were both slightly wounded, and the former received the thanks of the Governor-General in Council, conveyed in a notification dated 28th April.

A detachment was present at the storm and capture of Bassain on the 19th May, on which occasion Lieutenant Ford was mentioned by Major Errington, of H.M.'s 51st Regiment L.I., commanding the troops engaged, as having behaved in the most gallant manner. Lieutenant Ford and the men of the Sappers and Miners were also favorably noticed in the notification of the Supreme Government, dated 5th June.

A detachment under Lieutenant Macintosh was present at the capture of Pegu on the 4th June, soon after which the town was made over to the Peguers, who however were soon driven out of it by the Burmese.

The Sappers were also present on the undermentioned occasions:—
 Occupation of Fome. The occupation of Fome on the 10th October.
 Storm and capture of Pegu. The storm and capture of Pegu on the 21st November.

Defence of Pegu.

The defence of that place from the 24th November until the 14th December, when it was relieved by General Godwin.

Night attack on Prome.

The Burmese attack on Prome on the night of the 8th December. Previous to that attack the Sappers had rendered most valuable service by constructing breast-works and abbatiss.

One company served with the column under Brigadier-General S. W. Steel in the march from Martaban to the city of Tonghoo, and was present at the affair of Tonghoo on the 18th January 1853. This column left Martaban on the 14th January, and after a severe and difficult march of 240 miles, principally through forest, it arrived at Tonghoo on the 22nd February and took possession of the city without opposition.

Brigadier-General Steel, in his despatch to the Supreme Government, dated at Tonghoo on the 23rd February, mentioned the company of Madras Sappers and Miners as having maintained their well-earned name in overcoming the many difficulties of the route of march.

In February 1853 a detachment under Captain Loch, R.N., C.B., composed of Seamen, Marines, and about 300 men of the 67th Bengal N.I., was defeated near Donabew and lost its guns. Early in March a force of about 1,500 men, with two guns, under Brigadier-General Sir John Cheape, Bengal Engineers, was sent to retrieve this disaster. A detachment of Madras Sappers under Lieutenant, now Lieutenant-Colonel Mullins, of the Royal (late Madras) Engineers, and to which Lieutenant now Lieutenant-Colonel Trevor, V.C., of the Royal (late Bengal) Engineers, was attached, marched from Donabew with the force, and was actively engaged from that time until the 19th March, when the stockaded position of Myatoon at Kyou-kazeen was attacked and carried.

The difficulties with which the force had to contend are described in the original report of Lieutenant Mullins, dated 24th March 1853, from which the following are extracts:—

"On the 7th instant the Sappers having completed at Donabew the necessary equipment for our advance against Myatoon's position at Kyou-kazeen, we marched that afternoon with the force, taking our position immediately in rear of the advanced guard.

"On reaching Akyoo the same evening at sunset, it was considered advisable by the Brigadier-General to form rafts for crossing the lake (beyond which our line of march lay) immediately. A favorable spot

having been selected for this purpose, and the carts containing the rafts having come up, the Sappers, though under a considerable fire of musketry and jingals, formed a raft for the passage of the guns and troops in about two hours.

"By two hours after daybreak on the morning of the 8th the second raft was likewise completed under a dropping fire. The rafts having been rowed up to a point favorable for the embarkation of the troops, and a fog, which had previously obscured the opposite bank, having cleared off, the Brigadier-General directed the passage to be commenced. The two rafts filled with troops were immediately rowed across by the Sappers.

* * * *

"On the 14th, 15th, and 16th the Sappers were employed in constructing a breast-work and stockade for the protection of the detachment which the Brigadier-General had ordered to remain for the purpose of forming a depôt for Commissariat stores.

"On the afternoon of the 17th the Sappers were ordered to proceed with the Right Wing; under the command of Major Wigston, 18th Royal Irish, for the purpose of clearing the road for the advance of the main column on the following morning. The road was found to be entirely blocked up with felled trees; these however the Sappers, after great exertions, succeeded in clearing away as far as the lake stockade, which was stormed a few minutes before sunset.

"On the 18th the Sappers were again occupied from early in the morning till sunset in cutting a road and removing obstacles (part of the time at the second stockade being under a heavy fire) to enable the guns to come into action.

"19th. During the whole of this day the Sappers were hard at work as before, and for three-quarters of an hour under a very heavy fire in front of the third stockade they were occupied in rendering the road practicable for the advance of the Artillery."

"In forwarding this report for the information of the Brigadier-General Commanding, I have the honor of bringing to his notice the unceasing exertions, the coolness under fire, and general good conduct of the detachment under my command during the protracted operations which resulted in the total defeat of the enemy."

The undermentioned extracts are taken from a letter from Lieutenant-Colonel Mullins to the Commandant Queen's Own Sappers and Miners, dated 25th November 1876, in which further details are given regarding the operations in question.

"When we first reached Donabew the Sappers had no means of conveying the troops across the nullahs with which we heard the country between the Irrawaddy and Myatoon's stronghold was inter-

sected, and the only appliances to be found were Commissariat casks, which were obtained from Rangoon, and ropes which Commodore Lambert the senior Naval Officer kindly supplied. Cask rafts of two barrel piers each were made up and they answered admirably."

* * * *

"What is mentioned as the third stockade was an extremely strong position. Its length was some 1,200 yards, its left flank was protected by a morass, and along the whole front there was a nullah with a good deal of water and soft mud at bottom; the ground near the right flank was nearly dry and was covered by an abbatis which was penetrable by individuals with extreme difficulty and some danger even after the capture of the stockade, and was altogether impracticable to troops under fire. The only entrance to the stockade was a narrow path, across which at intervals pits had been dug, and this path was commanded by the two guns captured from the previous expedition and by several jingals. It was here that Lieutenant Trevor, after several attempts to reach the stockade had failed, was successful in at length leading the way in, and the fact is recorded in Sir John Cheape's despatch.

"The Sappers, throughout the expedition, worked in front of the column under the protection of the advanced guard, which practically consisted of skirmishers, there being no room for any formation until the Sappers had cut a road through the jungle. Piling and unpling arms perpetually was found to be very troublesome, and carrying arms in addition to tools an additional fatigue. Consequently the Sappers' arms were placed in a cart, and the men on more than one occasion entered stockades with the storming party with felling axes and dhars* as their only weapons. On the 19th March the men had to cut a road all along the front of the stockade, and at a distance of from 35 to 40 yards only from its face, under a fire of great severity, which did not cease for a moment until the stockade was stormed. Their work throughout was most laborious, for in addition to clearing the way, which involved cutting through and removing large trees, levelling the ground, &c., from morning until night, or constructing rafts and bridges for crossing the nullahs, they were called upon to provide for the safety of the picquets and outposts, and sometimes their work was not over until some hours after sunset. No men could have done better, or have been more cool and steady under fire, and the circumstances of the expedition made their services invaluable."

Lieutenant Mullins and the Sappers were mentioned in Sir John Cheape's despatch of the 25th March 1853 in the following words:—

* A Burmese weapon. A sort of sword with a handle about the same length as the blade, and very useful for felling small trees.

Extract from Sir John Cheape's Despatch. "To Lieutenant Mullins and the detachment of Madras Sappers and Miners the greatest praise is due; the work executed by the men was most laborious, and the zeal and talent with which their energies were directed by Lieutenant Mullins was most creditable to him. He was ably seconded by Lieutenant Trevor, and I am mainly indebted to these officers and the men under them for enabling the troops to reach the enemy's position."

Annexation of Pegu and withdrawal of the main body of the army. On the 30th June 1853 a notification was issued by the Governor-General of India in Council to the effect that the army of Ava would no longer be maintained on a war establishment, but that a force would be permanently retained in Pegu for the defence of that annexed province. The notification concluded by directing that a donation of six months' batta should be granted to all the Commissioned, Non-commissioned officers, and men of the several Naval and Military forces that had been employed during the war.

1854. In January 1854 a party of Sappers served with the detachment under Major Allan, who was employed to mark out the northern boundary. This detachment was attacked about 42 miles north of Tonghoo, but repulsed the enemy.

The undermentioned officers served with the Sappers and Miners during the second war in Burmah:—

Captain J. W. Rundall and Lieutenants Carpendale, Oakes, Rogers, Ryves, Dennison, Vaughan, Mullins, Mayne, and Gahagan, all of the Madras Engineers, and Lieutenants Macintosh, Ford, Carter, Wilson, Shortland, Farquhar, Harris, Allan, Furlong, and Daniel of the Madras Infantry.

A naigue and private admitted to the order of merit for conspicuous gallantry.

Naigue Moottoo Veerapen and Private Ramasawmy were admitted to the 3rd class of the order of merit for conspicuous gallantry during this campaign.

1857. Expedition to Persia. Services of the B Company. The B Company embarked at Coconada on the 19th January 1857 to join the expedition to Persia, and arrived at Bushire in March. It proceeded on board the Indian Navy S.S. *Victoria* with the second division of the Persian field force up the Shat-ool-Arab river to within three miles of the southern battery of Mohumra. During the night of the 24th Major Boileau and other staff officers reconnoitred the enemy's position, especially with a view to ascertain whether it were possible to establish batteries on the island of Dubbee, west of the northern battery.

On the evening of the 25th the B Company was transferred to the Bengal Marine S.S. *Hugh Lindsay*. At daybreak on the 26th the

Indian naval squadron ran up the river until opposite the forts defending the channel leading up to Mohumra, and engaged the batteries. The carronades of the *Hugh Lindsay* were worked by H. M.'s 64th Regiment assisted by the Sappers. By 11 A.M. the enemy's batteries were silenced, and the disembarkation of the troops was effected by 1½ P.M.

The division advanced through date groves intersected by irrigation canals, many of which were bridged by date trees felled by the Sappers. The bridge by which the Artillery and Cavalry crossed the main irrigation channels consisted of trees felled on both sides of the channel, with a large Arab boat as a central support.

The Persians retired precipitately, leaving their tents, baggage, Mohumra. guns, and stores, with a loss of about 200 killed.

The work of the Madras Sappers at Mohumra was extremely heavy. Batteries were destroyed, roads made, landing stages constructed, streams dammed or turned, and model huts erected.

The following is a copy of the letter addressed to the Adjutant-General of the Madras Army by the chief of the staff of the expeditionary force on the return of the company to Bombay:—

Camp Mohumra, 13th May 1857.

"SIR,—In reporting to you the departure this day in the transport Complimentary order *Hibernia* bound for Bombay of the B Company, by Sir James Outram. Sappers and Miners, I am instructed by Lieutenant-General Sir James Outram to state that the conduct of the men has been exemplary since they joined this force, and that they have rendered the most efficient service on the expedition against Mohumra and during its occupation.

"2. The peculiar features of the country afforded them ample employment, and the skill and wonderful rapidity and cheerful alacrity with which they constructed roads through the extensive date groves, bridged the canals, and formed piers for disembarking troops and stores from the vessels on the Shat-ool-Arab river, were the admiration of the whole army.

"3. I am commanded to request you will be so good as to lay before His Excellency Sir Patrick Grant this record of Sir James Outram's appreciation of the services performed by the Sappers, and that you will permit me to convey through you to the officer commanding (Brevet Major Boileau) and to all ranks composing the company an expression of the Lieutenant-General's very best thanks for the very efficient service they have rendered.

(Signed) EDWARD LUGARD, Brig.-Genl.,
Chief of the Staff Expeditionary Force."

The services of Major Boileau and of the B Company were also brought to the notice of the Governor-General by Sir James Outram in a Dispatch dated at Bombay on the 5th July, from which the following is an extract :—

"His and their services were most conspicuous in the zeal and activity they displayed in filling ditches, preparing bridges, &c., to facilitate the landing and advance of the troops at Mohumra, and the subsequent incessant labors they were exposed to during our occupation of Mohumra, and I consider that they deserve special notice and warm commendation for the alacrity with which they volunteered for foreign service, though they had only very lately rejoined their families after separation of nearly five years of successive absences on field service. Although sent back to India, this devoted body of soldiers, instead of being allowed to rejoin their families in the Madras Presidency, has, I understand, been attached to the column under General Woodburn intended for the relief of Mhow, with which they are now employed, having displayed, I am told, the utmost cheerfulness and alacrity when ordered* on the duty."

The officers employed with the company of Sappers and Miners in Persia were

Captain and Brevet Major A. M. Boileau, Commanding Engineer.

Lieutenant P. A. Brown.

Lieutenant F. R. Fox, 14th Regiment, M.N.I.

Second Lieutenant H. N. D. Prendergast, Madras Engineers.

" " H. J. Gordon, " "

Subadar Seelooway.

Jemadar Ali Khan.

Assistant Surgeon T. Lowe.

The B Company disembarked at Bombay on 1st June 1857 on its return from Persia, and at once volunteered for service in the field. On the 16th June it proceeded to Aurungabad, and joined the field force under Major-General Woodburn C.B., on the 5th July. On the 12th the force marched from Aurungabad, and relieved Asseerghur on the 25th idem and Mhow on the 2nd August, the Sappers having had frequent employment on the way as Pioneers, in making roads passable, and in ramping banks of rivers and streams. During the rains the Sappers were employed in strengthening the defences at Mhow. On the 20th October the left

Indian Mutiny.
Services of the B
Company in the
Deccan, and with the
Mhow, Malwa, and
Central India field
forces.

* The B Company volunteered for this service.

half company marched under command of Lieutenant Fox, 14th Regiment M.N.I., towards Dhar with Major Keane's column, and took part as skirmishers in the successful affair near that place on the 22nd October.

On the 24th idem the right half company reached the camp of the Malwa field force before Dhar, having escorted the siege guns from Mhow.

By the 25th, No. 1 Mortar Battery was completed and armed. On the 26th, the ridge 200 yards west of Dhar was occupied. Batteries No. 2 for field guns and No. 3 for breaching guns and mortars were armed and in action early on the 27th, but constant work at them was required till the end of the siege, the Sappers frequently revetting and improving the embrasures in broad daylight, and always working 18 hours out of the 24. On the night of the 28th, Battery No. 4 was erected, and the screen approach to it was made the following morning. Fire was kept up almost unremittingly, till on the evening of the 31st the breach was reported practicable, and orders were given for storming the fort before daybreak on the 1st November, but the enemy evacuated the place during the night, and it was occupied without further opposition. Major Boileau, Field Engineer, brought the services of the Sappers to the notice of General Stuart in the following words:—

"3. I would first allude to my two assistants, Lieutenants Prendergast and Gordon, whose energy and activity were most untiring. Their coolness under fire was very conspicuous.

"4. The Brigadier Commanding has been pleased to notice favorably the exertions of the officers and men of the Madras Sappers and Miners. Their duties were truly arduous, and right well were they carried out.

"6. There are two individuals whom I wish to bring to the special notice of the Brigadier Commanding, viz., Corporals Hoskins and Clarke of the Madras Sappers and Miners. These men volunteered for the dangerous service of inspecting the breach in broad moonlight, at a time when there was reason to suppose they would be fired on at every step, and almost certainly shot on the breach. The duty was a necessary one, and was most cheerfully and unhesitatingly performed."

The following is an extract from the report of Brigadier-General Stuart to the Adjutant-General of the Bombay Army, dated at Dhar, 4th November, and which was published in the *Fort Saint George Gazette* of the 15th December 1857:—

Report of Brigadier-General Stuart.

"I beg, in conclusion, to bring most prominently to the notice of His Excellency the Commander-in-Chief the great assistance I have received from Major Boileau and the officers and men of the Madras Engineers and Sappers and Miners throughout the late operations; the conduct of Corporals Hoskins and Clarke of the latter corps has, His Excellency will observe, been especially marked for gallantry, and I earnestly trust that both these deserving men may be rewarded."

On the 8th November the company marched from Dhar along with the rest of the force, and encamped near Mundisoor.

Action at Mundisoor. disoor on the 21st idem. Major Robertson 25th Regiment Bombay Native Infantry, commanded the outposts. About midday his picquets were driven in by a determined advance of the enemy's infantry, which however was checked by a charge of Cavalry till the main body of the field force, hitherto concealed from the enemy by rising ground occupied by the outposts, had formed for action. The villages in which the outposts had been placed were speedily prepared for defence by the Sappers, who afterwards aided in maintaining them, and also in the defeat of the enemy on the subsequent advance of the field force. Second Lieutenant Prendergast

was severely wounded on that day. On the 23rd
Action at Goorariah. the force came upon the Shahzadeh's army in the strong position of Goorariah, five miles north-west of Mundisoor. The Brigadier at once prepared to attack, and charged the batteries in the centre of the position. The Sappers were in echelon on the left of the 25th Regiment in the advance.

During the action a strong body of rebels marched from Mundisoor with the intention of attacking in reverse the right of the British line, which was already outflanked by the preponderating strength of the force from Neemuch. The attempt however was frustrated by prompt action on the part of the rear guard, consisting of detachments of the 14th Light Dragoons, 1st and 4th Cavalry Hyderabad Contingent, Madras Sappers and Miners in charge of an 8-inch Howitzer, and the 25th N. I.

Havildars Appoo* and Gooroosamy of the Sappers were distinguished for their readiness in loading and firing the Howitzer at a critical moment of the action.

On the 24th of the same month the village of Goorariah was stormed and carried. The Sappers accompanied
Storm of Goorariah. the storming parties, and were specially useful in knocking down walls and making approaches by which troops could advance upon the enemy under cover. Naigue Vellient† distinguished himself by his cool courage.

* Afterwards Subadar "Bahadoor."

† Afterwards Subadar-Major "Sirdar Bahadoor."

The following is a copy of Brigadier-General Stuart's acknowledgment of the services of the Sappers on this occasion, which was addressed to the Adjutant-General of the Bombay Army, and afterwards published in the *Fort Saint George Gazette* of the

23rd January 1858:—

"Of the conduct of Captain Brown and the officers and men of the B Company, Madras Sappers and Miners, I have much pleasure in speaking in the highest terms. Whether as Sappers or as Infantry, they have distinguished themselves on every occasion. They have undergone an incredible amount of hard labor during our late march, with a siege train over a country without roads, nor must I omit to mention that they accompanied the storming parties into the village of Goorariah, and proved of the greatest service.

* * * *

"I must now, in conclusion, place on record my grateful acknowledgments to Major Boileau and his assistants."

In November 1857 the number of companies in the corps of Sappers and Miners was increased from nine to twelve under the authority of the Government of India.

1857.

From Mundisoor the B Company marched through Mahidpoor to Indore, and thence on the 8th January 1858 with the 2nd Brigade of Sir Hugh Rose's Central India

1858.

field force, through Sehore and Bhopal, towards Saugor.

On the 24th January the brigade encamped before Ratghur after driving the enemy into the fort. On the 26th the pettah north of the fort was taken, and from this the right attack was commenced. The Sappers were employed in making the road to the left attack on the eastern face of the fort, and in making such protective works as were possible for men and guns, by cutting brushwood for screens, and building stone breast-works. A sand-bag battery for two 18-pounders and one 8-inch Howitzer was completed by daylight on the 27th, and on the evening of the 28th the breach was reported practicable by Subadar Seelooway, Privates Pitchamootoo and Chinnatumbée, and Corporal Linahan, all of the Sappers, who had been sent to inspect it. The enemy, however, evacuated the place during the night.

On the 3rd February the brigade relieved Saugor. On the 8th, half the company marched to Nowreowlee, distant 14 miles, and returned the same day, having mined and blown up the towers flanking the gate. On the 9th the Sappers destroyed the fort at Sanoda, and on the 10th took part in the affair at Bussaree, close to Garacotta. Batteries were commenced against Garacotta on the 11th, but the enemy abandoned the fort on that night.

Relief of Saugor and destruction of neighbouring forts.

Affair at Bussaree.

One of the fronts was then mined and destroyed so as to leave a practicable breach, and the force resumed the march towards Jhansi. On the 1st March the small fort of Barodia was taken. On the 2nd, half the company occupied and strengthened the fort. On the 3rd, the remainder of the men were employed in forcing the pass of Mudnapore. On the 11th, a party was engaged in blowing up the castle of Bawanpore, and on the 14th and 15th the company completed a survey of the Fort of Tal Behut, which had been evacuated a few days before.

On the 20th a strong detachment from the 2nd Brigade advanced by a forced march of about 25 miles, and placed picquets on all the chief roads round Jhansi.

On the 21st, reconnaissances were made by the General and by Major Boileau, and the head-quarters marched to the neighbourhood. The

following extracts are taken from the report of Sir Hugh Rose, dated 30th April, in which the operations of his force against the fortress and the

fortified city are detailed :—

"The great strength of the fort, natural as well as artificial, and its extent, entitles it to a place amongst fortresses. It stands on an elevated rock rising out of a plain, and commands the city and surrounding country; it is built of excellent and most massive masonry. The fort is difficult to breach because composed of granite; its walls vary in thickness from sixteen to twenty feet.

"The fort has extensive and elaborate outworks of the same solid construction, with front and flanking embrasures for artillery fire, and loop-holes, of which in some places there were five tiers, for musketry; guns placed on the high towers of the fort commanded the country all around. One tower, called the "white turret," had been raised lately in height by the rebels and armed with heavy ordnance.

"The fortress is surrounded by the city of Jhansi on all sides except the west and part of the south face. The steepness of the rock protects the west. The fortified city wall, with bastions springing from the centre of its south face, running south and ending in a high mound or mamelon, protects by a flanking fire its south face. The mound was fortified by a strong circular bastion for five guns, round part of which was drawn a ditch 12 feet deep and 15 feet broad, of solid masonry.

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"The Chief of the rebel Artillery was a first-rate Artilleryman; he had under him two companies of Golandauze. The manner in which the rebels served their guns, repaired their defences, and reopened fire from batteries and guns repeatedly shut up, was remarkable. From some batteries they returned shot for shot. The women were seen working in the batteries, and carrying ammunition."

On the 2nd April the necessary preparations for the assault were completed and the place was attacked on the 3rd and carried after an obstinate resistance.

Sir Hugh Rose, at the conclusion of his report, brought the conduct of the troops to the favourable notice of the Commander-in-Chief in the following words:—

"They had to contend against an enemy more than double their numbers, behind fortifications, who defended themselves afterwards from house to house in a spacious city, often under the fire of the Fort, afterwards in suburbs and very difficult ground outside the walls."

* * * *

"The nature of the defence and the strictness of the investment gave rise to continued and fierce combats ; for the rebels having no hope, sought to sell their lives as dearly as they could. But the discipline and gallant spirit of the troops enabled them to overcome difficulties and opposition of every sort, to take the fortified city of Jhansi by storm, subduing the strongest fortress in Central India, and killing 5,000 of its rebel garrison."

* * * *

"I beg leave to state the obligations I am under to the following officers for the services which they have rendered to me during the siege operations and capture of Jhansi:—

"Captain Brown, Commanding Company Madras Sappers and Miners.

"Major Boileau, Commanding Engineer.

"I have much satisfaction in bringing to the notice of His Excellency, the officers mentioned in the Brigade Despatches.

* * * *

"Lieutenant Fox, Madras Sappers and Miners."

On the 1st April during the siege, the portion of the Central India Field Force not actually on duty in the trenches, Battle on the Betwah. and which amounted to about 1,500 men of all arms, fought a general action on the river Betwah with the rebel army under Tantia Topee which attempted to relieve the place, and gained a complete victory over it, taking 18 guns, and killing upwards of 1,500 of the enemy. Lieutenants Prendergast and Fox were both specially mentioned for their conduct during this action, the former for having distinguished himself on various occasions under the General's eye "by his merit and gallantry as devoted as they were unostentatious," and particularly in the charge made by Captain Need's troop, H. M. 14th

Light Dragoons, when acting Aide-de-Camp to Sir Hugh Rose; the latter for having killed eight men with his own hand.

On the 25th April the company marched from Jhansi, and was next engaged with the enemy in the action before the town of Koonch on the 7th May.

On the 9th and 10th the Sappers destroyed the defences of Hindooi, and on the 15th the force encamped at Golowlee, about six miles from Calpee. From the 15th to the 23rd May inclusive there was constant fighting between Golowlee and Calpee. Sir Hugh Rose described the tactics of the enemy in unceasingly

Harassing march
from Golowlee to
Calpee.

harassing his troops and forcing them into the sun, large bodies of cavalry hanging on his position, retiring when attacked, but ready to fall on escorts sent to a distance for forage, the want of which was the cause of serious losses. The thermometer stood at 118 degrees in the shade; a great proportion of officers and men were ill; the force for months had been making the strongest physical exertions with broken sleep, or no sleep at all, watching the camp half the night, and marching the other half to avoid the sun, then often all day without rest, fighting, or on the rear guard, or on reconnaissance or escort under a burning sun. The Sappers were constantly employed in making roads passable throughout the march, and occasionally in hauling heavy guns through difficulties.

On the 6th June the company marched towards Gwalior with a detachment under Sir Hugh Rose, composed of one Battery of Artillery, and two Squadrons of Cavalry. The thermometer in the shade stood at 130 degrees. On the 16th the Sappers, then reduced to 45 men, took part in the action at Morar. They were commanded by Lieutenant Gordon, who was mentioned in Brigadier-General Napier's Despatch as having kept pace with the 71st Regiment and joined in the attack on the ravines. The men were then employed to make a bridge over the canal, but it became necessary to attack the enemy without waiting for the completion of this work, and Gwalior was assaulted and taken on the 19th June.

Gwalior taken by
assault.

Sir Hugh Rose in his report mentioned the Sappers as follows:—

"The Company of Madras Sappers and Miners, whose zeal and intelligence no hardships can abate, would have completed the bridge by sunset, and I anticipated the best results from availing myself of it for the purpose of cutting off during the night the enemy's numerous force of all arms on the hills."

The detachment left Gwalior a few days afterwards, and with the exception of an affair on the banks of the Jumna, where a party of the

enemy was routed, it had no further opportunity of distinguishing itself during the Central India Campaign.

This company took the field with 6 European officers, 2 Native officers, 4 Havildars, 8 Naigues, 105 Privates, Casualties of the B Company during the Mutiny. and 3 Artificers; it returned to Head-Quarters 41 strong of all ranks, commanded by the junior Subaltern, all his seniors having been sent away sick or wounded.

The undermentioned officers serving with the company were rewarded as follows :—

Major Boileau, Engineers ... Brevets of Lieutenant-Colonel and Colonel.

Captain P. A. Brown, Madras Fusiliers... Brevet of Major.

Lieutenant H. N. D. Prendergast, Engi-

neers ... Brevet of Major & V. C.

Assistant Surgeon T. Lowe ... Brevet Surgeon.

Subadar Seeloway ... "Bahadoor."

Jemadar Ali Khan ... "Surdar Bahadoor."

Subadar Seeloway, Jemadar Appavu, Naigue Narrainsawmy, Lance Naigue Pitchamoottoo, and Privates Savathean, Appasawmy, and Chinnatumby, were admitted to the 3rd class of the order of merit for having displayed conspicuous gallantry on several occasions at Ratghur, and at Morar.

The following is a copy of the recommendation of Lieutenant Prendergast for the Victoria Cross, which was conferred on him by Her Majesty in October 1859.

Regiment.	Rank and Name.	Acts of bravery for which recommended.
Madras Engineers	Lieutenant Harry North Dalrymple Prendergast.	For conspicuous bravery on the 21st November 1857 at Mundisoor in saving the life of Lieutenant G. Dew, 14th Light Dragoons, at the risk of his own, by attempting to cut down a Valaitee who covered him, Lieutenant Dew, with his piece from only a few paces to the rear. Lieutenant Prendergast was wounded in this affair by the discharge of the piece, and would have probably have been cut down had not the rebel been killed by Major Orr.

He also distinguished himself by his gallantry in the actions at Ratghur and the Betwa when he was severely wounded.

Major-General Sir Hugh Rose in forwarding his recommendation of this officer, states :—Lieutenant Prendergast, Madras Engineers, was specially mentioned by Brigadier, now Sir Charles Stuart, for the gallant act at Mundisoor, when he was severely wounded; secondly, he was specially mentioned by me when acting voluntarily as my Aide-de-Camp in the action before besieging Ratghur on the Beema river for gallant conduct, his horse was killed on that occasion; thirdly, at the action of the "Betwa" he again voluntarily acted as my Aide-de-Camp and distinguished himself by his bravery in the charge which I made with Captain Need's troop, Her Majesty's 14th Light Dragoons, against the left of the so-called Peishwa's Army under Santia Topec. He was severely wounded on the occasion.

The account of the B Company during the Mutiny may be fitly concluded by the following extract from the *London Gazette* of the 8th November 1859, which was republished in the *Fort St. George Gazette*, dated 29th June 1860.

London Gazette, November 8th, 1859.

INDIA OFFICE, *November 4th, 1859.*

The following papers have been received by the Secretary of State for India in Council :—

No. 1.

Extract of a letter from Major-General Sir HUGH ROSE G.C.B., dated 14th May 1859.

Para. 16. I have already praised the excellent conduct of the B Company, Madras Sappers and Miners, which formed part of my Force ; but I now beg leave to request, most respectfully, His Lordship the Commander-in-Chief in India, to have the goodness to convey to His Excellency the Commander-in-Chief of the Madras Army, the high sense which I entertained of the excellent service which they performed under my orders. They lived on the very best terms with their English comrades ; no work was too dangerous, or too difficult for the gallantry and devotion of this Company which has been twenty years* on Foreign Service. On account of the great length of hard service which the Company had gone through it was to return to Madras from Calpee, but on Gwalior falling into the hands of the rebels the Company again took the field with the utmost alacrity, and again earned, not only my sincere approbation, but that also of the Central India Field Force, by its unvarying gallantry and zeal. Captain Brown deserves to be specially mentioned for having led this distinguished Company at the escalade of Jhansi, and for having commanded it from the 5th July 1857, when its commander, Lieut.-Colonel Boileau was appointed to the Staff, till the close of the operations against Jhansi, when he fell sick. Lieutenant Gordon then took the command of the Company, and I beg to mention him specially for the satisfactory manner in which he performed this duty. The Subadar† of the Company has a full right to be specially mentioned for his admirable conduct throughout the campaign.

<p>The C Company served during the Mutiny.</p>	<p>1857. Lieutenant-General Sir James Outram, and afterwards with that under Brigadier-General Sir Hope Grant. It was present at the relief of Lucknow on the 17th November 1857, and a Detachment under Lieutenant Ogilvie was engaged</p>
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* The Company embarked on the 19th January 1857 for Persia, so that when Sir Hugh Rose wrote his despatch, it had been about 20 months on Foreign Service.

† Subadar Seeloway.

in the action at Guilee on the 22nd December, when the enemy were defeated by a column under General Outram, and lost their guns. The Company was sent to the Alumbagh soon afterwards and was engaged in the defence of that position in January and February 1858.

It marched with the Commander-in-Chief's Force against Lucknow and was present during the operations before that place from the 2nd to the 21st March, which terminated in the capture of the city. During the remainder of the year it was actively employed in Oude, and was present at the affair of Barree on the 13th April, and that at Sirsie on the 12th May, the action at Nawabgunge on the 13th June, the occupation of Fyzabad on the 29th July, the actions at Sultanpore on the 13th and 28th August, the affair at Shahpore on the 13th October, the action at Daoudpore on the 2nd idem, and the capture of the forts at Rehora and Kooelee on the 23rd November.

1859. From the 6th December 1858 to the 17th January 1859, it was employed beyond the Gogra.

The services of the company and of the officers doing duty with it, were acknowledged in the orders from which the following extracts are taken :—

Dispatch from the Right Honorable the Secretary of State for India, dated 28th November 1858, No. 28.

* * * *

The thanks of Major-General Sir James Outram to * * appear to have been fully merited by their gallant and soldier-like conduct.

His testimony to the conduct and services of the C Company of Madras Sappers and Miners under Lieutenant C. Scott is highly honorable to them. "Their skill as workmen, their industry, their cheerful alacrity, and general good conduct, commanded the respect of all who saw them at Alumbagh; and their coolness and bravery when called upon, as they were on every occasion of attack on our position, to act as soldiers, was conspicuous. This testimony to the value of the corps supports the opinion the late Court of Directors have expressed in favor of increased enlistment of men of the classes* of which that corps is chiefly composed."

* Appendix A.

*Extract from an Order of the Governor-General in Council,
dated at Allahabad, 5th April 1858.*

* * * *

Roll of Officers who have served under Brigadier* R. Napier, commanding Engineer Brigade during the operations at Lucknow in March 1858, and who are deemed deserving of honorable mention.

Corps or Detachment.	Rank and Names.	Remarks.
*	* *	* * *
Madras Engineers ..	Lieutenant Scott ...	Actively engaged on all attacks on the Begum's Palace and Kaisar Bagh.
Madras Native Infantry with Madras Sappers.	Ensign Ogilvie ...	Engaged in attack on the Emaum Bara and Kaisar Bagh. In the taking of the latter he accompanied the most advanced party of Her Majesty's 10th Foot under Captain Norman, assisted in the defence of their post, and went through a heavy fire to bring up reinforcements, which he did, remaining with them until severely wounded. Captain Norman publicly thanks Ensign Ogilvie for his services.

(Signed) R. NAPIER, Brigadier,
Chief Engineer.

Roll of Officers and men who have served under Brigadier-General Sir E. Lugard K.C.B., commanding 2nd Infantry Division during the operations at Lucknow in March 1858, and who are deemed deserving of honorable mention.

Head Quarters, 2nd Division, 25th March 1858.

Officer of Sappers honorably mentioned during siege of Lucknow.	Corps or Detachment.	Rank and Names.	Remarks.
	Madras Sappers.	Lieutenant Scott ...	Accompanied the advance party on the 11th with powder bags and ladders.

(Signed) EDWARD LUGARD, Brigadier-Genl.,
Commanding 2nd Infantry Division.

This officer was killed on the 23rd November when reconnoitring the gate of the Fort at Kooelee and was again honorably mentioned

* Lord Napier of Magdala.

both by the Governor-General and the Commander-in-Chief in the letter and order given below :—

*From the Adjutant-General of the Army, Allahabad,
21st December 1858.*

To

The Secretary to the Government of India.

" Sir,

* * * I am to
express Lord Clyde's regret that Captain Scott, of the Madras
Engineers, who had already achieved a good reputation as an officer,
should have fallen in these operations."

*General Order by the Right Honorable the Governor-General.
Allahabad, 30th December 1858.*

* * *
" While the conduct of the officers and men engaged in these operations has given the Governor-General the highest satisfaction, His Lordship regrets that it has been accompanied by the loss of Captain C. Scott, Madras Engineers, who had earned the approval of the Government by a zealous and efficient discharge of his duty."

On the 28th November 1859, Lord Clyde, on the approaching
Complimentary order by Lord Clyde on the return to their respective Presidencies of the troops of Madras and Bombay. return of the Madras and Bombay troops to their respective Presidencies, recognized their important services in a General Order, of which the following portion relates to this Company :—

* * *
"The C Company, Madras Sappers and Miners, were engaged and distinguished at the relief of Lucknow; the Sapper Company subsequently remaining with General Sir James Outram's Force at Alumbagh, taking a part in the siege and capture of Lucknow, and being afterwards constantly employed in Oude under Sir Hope Grant through the year 1858."

Havildar Tiroovengadum, and Privates Bagawaddy, Permaul, and Chinnien of the C Company were admitted to the 3rd class of the order of merit for conspicuous gallantry at Lucknow.

Men admitted to the order of merit for conspicuous gallantry.
The L Company served with the column under Major-General Whitlock, and was present at the surprise and destruction of Jheegung on the 9th April 1858, the affair at Kubra 17th idem, the battle of

Banda 19th idem, the surrender of Kirwee 6th June, the relief of the garrison at Kirwee on the 25th December after a march of 70 miles in 36 hours, and the action at Punwarree on the 29th idem where Rajah Govind, the leader of the enemy, was killed.

Order by Lord Clyde
on the return of the
Madras and Bombay
troops to their
respective
Presidencies.

* * *
L Company, Sappers and
Miners.

The services of this Company were mentioned by Lord Clyde in his Order of the 28th November 1859 in the following words: "The Corps named in the margin * * * under Major-General Sir G. C. Whitlock, partook of the various operations under the direction of that officer, and have since been employed in the reduction and occupation of Bundelcund and Saugor.

* * * * *

The whole of these troops now leaving Bengal (whether of Madras or of Bombay) have gained additional credit for the Armies to which they belong, and Lord Clyde congratulates them on being about to return to their own Presidencies after a career of honorable service elsewhere.

The A and K Companies served with the second expedition to China with the force under the command of Lieutenant-General Sir James Hope Grant, G.C.B., and were present at the action in front of the entrenchments at Sinho on the 12th August 1860, at the capture of the lines at Tongkoo on the 14th and that of the Forts at Taku on the 21st idem. On the afternoon of that day the Sappers divided into four parties accompanied the stormers, viz., the Pontoon party under Lieutenant Pritchard R.E., the ladder party under Lieutenant Heine R.E., the party for removing obstacles under Lieutenant Trail R.E., and the party with the powder bags under Lieutenant Clements also of the Engineers. The A Company marched with the Army from Tientsin in September, and was present at the surrender of Pekin on the 13th October.

Surrender of Pekin.

The following is an extract from the order issued by the Governor-General on the conclusion of the war:—

Camp, Jubbulpore, the 17th January 1861.

His Excellency the Viceroy and Governor-General of India has much satisfaction in publishing for general information the subjoined letter, dated the 21st November 1860, from Lieutenant-General Sir J. Hope Grant, G.C.B., Commander of the Forces in China, bringing to notice the services during the campaign in that country of the native troops

of all arms which proceeded to China from Bengal, Madras, and Bombay.

The Governor-General congratulates the troops on the high testimony which they have earned for themselves from their distinguished commander by their exemplary conduct in Camp and Garrison, and by their valor in the Field.

* * * *

Head Quarters, the Tientsin, 21st November 1860.

MY LORD,—Peace having been concluded with this country, and many of the native troops serving in the Expeditionary Force being about to return to India, it becomes my duty to bring to your Excellency's notice the services of the Regiments and Corps of Her Majesty's Indian Army which have been serving during the campaign.

* * * *

The two Companies of Madras Artillery under Captain Hicks, and the two Companies of Madras Sappers under Captain Shaw-Stewart, rendered good and useful services in the operations which preceded, and led to the fall of the Taku Forts. The latter Corps was most energetic in working without relief at the construction of the batteries, and have always shewn themselves to be cheerful and willing workmen.

(Signed) J. HOPE GRANT, Lieut.-General,
Commander of the Forces.

Captain Shaw-Stewart R.E., was recommended to favourable notice for his exertions in trench duty, and he was accordingly promoted to the rank of Major in the Army from the 15th February 1861.

The other officers who served in China with the Sappers were

Lieutenant A. J. Filgate Royal Engineers.

Do. D. H. Trail, do. do.

Do. H. F. Dakeyne, 22nd Regiment M. N. I.

Do. N. Swanston, 37th " Grenadiers.

Do. M. E. Foord, 23rd " L. I.

Assistant Surgeon R. E. Pearse.

Early in 1862 the number of companies was fixed at 10 instead of 12, and the two junior Companies, viz, the L and M, were accordingly reduced.

The reduction was carried out by pensioning such men as were not in every respect fit for active service in the field, provided they had completed the prescribed period of service.

Short service men considered to have established special claims on account of service in the field, were granted donations in proportion

to their supposed merits. Those not having any such claims were paid up and discharged with the ordinary gratuity and travelling allowance.

The K Company arrived in Abyssinia on the 8th, and the G and H Companies on the 12th December 1867, under the command of Major H. N. D. Prendergast, R.E., V.C., with Captain M. E. Foord as Staff Officer to the Detachment.

The following is an extract from the report of the Commanding Engineer at the close of the campaign :—

"The G Company was posted at Zoula and Kumayli during the whole campaign. The services performed by this Company on the Public Works at Zoula, on the Railway, and on Kumayli Water-works, have been excellent.

"The sepoy of this Company excavated a well on the Railway line 85 feet in depth, without lining of any kind, and proved themselves very skilful workmen."

"I have much pleasure in recording the good services rendered by Lieutenant Morris, R.E., commanding this Company, in superintending the water arrangements at Kumayli.

"These services have proved most beneficial to the Transport Train Establishment at that post.

"I bring to favorable notice the services of Lieutenants Protheroe and Mainwaring, assistants to Lieutenant Le Messurier, who was in charge of the water-supply of the expedition.

"The H Company was employed during the whole campaign on the Public Works at Zoula, and was most industrious, ever ready and willing to undertake any work required of it. Lieutenant Pennycuik R.E., conducted his duties efficiently. Lieutenant Cunningham R.E., was detached to Antalo, and Cornet Dalrymple was sent to the front in charge of stores.

"The K Company commenced work on the Sanafe Pass after a short stay at Zoula, and afterwards when joined by Head Quarters improved the track route between Antalo and Magdala, rendering it suitable for laden mules and elephants, and was present at the action of Arogie, and taking of Magdala. Captain Elliot N.I. commanded, Lieutenant Bird being Subaltern Officer."

On the 10th April 1868, the action of Arogie was fought on the platform before Magdala. The K Company was on the right of the British line, and aided by the rockets of the Naval Brigade it prevented a detachment of the enemy from turning the flank of the 1st Brigade, and dispersed it.

The Force that assaulted Magdala on the 13th April consisted of the 2nd Brigade led by the 33rd Regiment, headed by the Royal Engineers and Sappers and Miners. Before an entrance was forced, Captain Elliot, Cornet Dalrymple and Serjeant Balding had received contusions, and Havildar Kistnasamy had been severely wounded in the arm.

In Sir Robert Napier's General Order of the 22nd April 1868, he addressed the Force as follows: "You traversed, often under a tropical sun, or amidst storms of rain and sleet, 400 miles of mountainous and rugged country. You have crossed ranges of mountains, (many steep and precipitous) more than 10,000 feet in altitude, where your supplies could not keep pace with you. In four days you passed the formidable chasm of the Bashilo; and when within reach of your enemy, though with scanty food, and some of you were for many hours without either food or water, you defeated the army of Theodore, which poured down upon you from its lofty fortress in full confidence of victory.

"A host of many thousands have laid down their arms at your feet. You have captured and destroyed upwards of 30 pieces of artillery. * * * You stormed the almost inaccessible Fortress of Magdala, defended by Theodore and a desperate remnant of his chiefs and followers."

In his Despatch, dated 1st June 1868, Sir Robert Napier wrote as follows: "The works of the Madras and Bombay Sappers and Miners under Major Prendergast, V.C., R.E., and Captain MacDonnell, R.E., have been singularly valuable and important," and again, "I desire to express my very high appreciation of the services of the officers commanding the several corps of the Expeditionary Force, and of the officers, non-commissioned officers and soldiers who have served under them during the campaign. * * * Major Prendergast, V.C., R.E., Madras Sappers and Miners."

The undermentioned officers of the Sappers were favorably mentioned in the report of Sir Charles Staveley, viz. :—

Captain Elliot commanding the K Company, Captain Foord, Lieutenant Bird, and Cornet Dalrymple.

On the conclusion of the war the following extract from a Military Despatch from the Right Honorable the Secretary of State for India was published in the *Fort St. George Gazette* of the 4th August 1868.

"I transmit for the information of your Lordship's Government a copy of a Despatch which, in accordance with the command of Her Majesty, I have this day addressed to the Governor-General in Council, conveying to the Government and Army of India the thanks of Her Majesty for the service rendered by them in the conduct of the operations in

Abyssinia, the termination of which in the most satisfactory manner has been recently reported to Her Majesty's Government."

* * * *

"I especially desire to record the high sense which Her Majesty's Government entertain of the zeal and alacrity displayed in the dispatch of the detachment of the Madras Sappers and Miners to take part in the expedition, and of the excellent service rendered by that body of men during the campaign, in the course of which they well maintained the high reputation of the Madras Army, no less than of the distinguished Corps which they represented."

In March 1876 the Sappers and Miners were distinguished by being made a Royal Regiment, and also by the appointment thereto of His Royal Highness the Prince of Wales as Honorary Colonel. The following is an extract from the order in which these distinctions were announced to the Army in India.

Fort William, the 10th March 1876.

The Viceroy and Governor-General in Council has the highest gratification in announcing that in commemoration of the visit to India of Field Marshal His Royal Highness the Prince of Wales, the Queen has been graciously pleased to appoint His Royal Highness to be Honorary Colonel of the following Regiments:—

* * * *

The Corps of Madras Sappers and Miners.

* * * *

Her Majesty has been further graciously pleased to confer on the following corps the distinction of being styled "Queen's Own," and of wearing on their colors and appointments the Royal Cypher within the Garter:—

* * * *

The Corps of Madras Sappers and Miners.

* * * *

During 1875-76 the C Company under the command of Lieutenant Howlett was employed with a Field Force in the Malay Peninsula, and rendered excellent service which is recorded in the Proceedings of the

Services of the C Company in the Malay Peninsula.

Madras Government, dated 22nd November 1876, from which the following are extracts :—

*Proceedings of the Madras Government, Military Department,
22nd November 1876.*

Field operations—Straits Settlements.

Read the following papers :—

No. 412. From Colonel H. K. BURNE, C.B.,

*Secretary to the Government of India,
Military Department,*

To Colonel J. MICHAEL, C.S.I.,

*Secretary to Government, Military Department,
Fort St. George.*

* * I am directed to forward, for the information of His Grace the Governor in Council, a copy of the communication noted in the margin relative to the services of the C Company (Queen's Own) Sappers and Miners during the recent operations in the Malay Peninsula, and to remark that the Government of India have great pleasure in forwarding this favorable report.

From the Quarter-
master-General in
India, No. 8,068, dated
the 21st October 1876
and enclosures.

* * *

From

Captain E. F. CHAPMAN, for Quartermaster-General in India,

To

Colonel H. K. BURNE C.B.,

*Secretary to the Government of India,
Military Department.*

* * I am directed by His Excellency the Commander-in-Chief to submit for the information of the Government of India the accompanying copy of a letter received from the Brigadier General commanding the late Larut Field Force bringing to notice the excellent service rendered by the Company of Madras Sappers and Miners under Lieutenant Howlett Madras Staff Corps, throughout the expedition.

2. In the Commander-in-Chief's opinion the services performed by the Company of Sappers and Miners were of great value, reflecting credit both on officers and men, and His Excellency thinks that the

*

report submitted by Brigadier-General Ross might be forwarded to the Government of Madras with a suitable acknowledgment.

Copy of a letter from Brigadier-General J. Ross C.B. Commanding Presidency District, late Larut Field Force, to the Quartermaster-General in India, dated 3rd October 1876.

I have the honor to submit the accompanying letter from Major J. T. Twigge, R.E., senior officer of that corps, who accompanied the Bengal troops under my command to Perak, and I would request the goodness of your moving His Excellency the Commander-in-Chief to submit the same for the information of the Government of Madras.

I can endorse all that Major Twigge says of the excellent service performed by Lieutenant Howlett, and the Company of Madras Sappers, and annex an extract of my letter to Major-General Sir Francis Colborne, K.C.B., regarding them.

On my arrival in Larut I found that the opening of the road to Quala Kangsa, and preparation of accommodation there was in abeyance, as laborers refused to work in so advanced a position without the support of troops.

The date of Major Twigge's letter will account for the delay in specially bringing the services of the Sappers to the notice of Government, and I regret that it should have occurred.

From Major Twigge R.E. to Brigadier-General J. Ross, C.B. Commanding Presidency District, dated Simla, 13th September 1876.

The official account of the late operations in the Malayan Peninsula having now been published, and finding that no mention has been made of the important service rendered by the Company of Madras Sappers who formed a part of the force, as they were employed under my immediate direction I venture to submit the following for your consideration with a view that if not too late, the value of their services to the well-being of the troops and success of the expedition might receive some acknowledgment. I have to express my regret that I omitted to bring the matter to your notice sooner.

2. The Company landed with the first portion of the force under the command of Colonel Cox 3rd Buffs, and were employed until the arrival of the main body at Gapis and Company Boyale; the former place they stockaded in a few days, so as to make it tenable by a small detachment, and did much to render the latter habitable by the troops.

It having been found impossible to send forward tents, &c., &c., owing to the insufficiency of transport provided by the Colonial Government, the Sappers were, on the 8th November, sent in advance of the

Major Twigge's report
of the services
rendered by the C
Company in Perak.

troops to Qualla Kangsa to erect hutting. By the exertion of these men, aided by some ten Chinese workmen, hut accommodation was provided as fast as the troops could be moved forward. Transport was economised and left available for other purposes, and considerable saving to Government effected; it also enabled the men to construct beds or platforms raised from the ground, the importance of which to their health in a climate like that of the Straits cannot be overrated; had it been necessary to use tents this would have been impossible; the provision of hospital accommodation, cover for the Commissariat Stores, &c., &c., were of immense convenience to the troops. The Sappers while employed on the above were at work from sunrise until sunset in all weathers; to show the amount of work done, I need only say, that over 11,000 superficial feet of hutting was erected between the 8th December and the end of the month. Considering the climate, and the difficulties which had to be contended with in the nature of the work, and the use of materials to which the men were unaccustomed, I venture to submit that they were deserving of especial praise for the readiness of resource they displayed.

3. In addition to the above, the position was enclosed by palisading, bridges built, and communication to the rear improved; a road was opened to Kotah Lamah, and many minor services conducive to the health and comfort of the troops performed.

Extract of a letter from Brigadier-General Ross C.B. to Major-General Sir Francis Colborne K.C.B. commanding in China.

"In conclusion, I would solicit your Excellency's commendation for the very excellent work performed by the Madras Sappers under the command of Lieutenant A. Howlett, working eight and nine hours a day; they were ever willing and cheerful, and proved themselves in every way to be right good and valuable soldiers."

Order thereon, 22nd November 1876.

His Grace the Governor in Council has much pleasure in forwarding to His Excellency the Commander-in-Chief the above record of the good service performed by Lieutenant Howlett and the C Company (Queen's Own) Sappers and Miners in the Malay Peninsula.

*	*	*	*
The Commandant 1877. Present establishment of the corps.	and Adjutant of the "Queen's Own" Sappers and Miners are selected from the Corps of Engineers; * the other officers may be taken either from the Engineers or from the Line.		

*Vide Appendix B.

The officers at present posted to the corps are :—

1 Colonel Commandant.	6 Captains.
2 Majors.	12 Lieutenants.
1 Captain and Adjutant.	} Included above.
1 „ Quartermaster.	
1 Surgeon-Major.	

The following is the detail of the Establishment :—

1 Conductor.	24 Recruit Boys.
1 Serjeant-Major.	24 Pensioned Boys.
1 Quartermaster-Serjeant.	10 Regimental Lascars.
20 Serjeants.	11 Puckallies.
20 1st Corporals.	1 Bhestie.
20 2nd „	1 Bricklayer Maistry.
1 Assistant Apothecary.	1 Stone-cutter.
1 2nd Dresser.	1 Cooper.
10 Subadars.	1 Armourer.
10 Jemadars.	10 Carpenters.
1 Havildar-Major.	10 Smiths.
40 Havildars.	10 Hammermen.
1 Honorary Havildar.	10 Bellows Boys.
80 Naigues.	1 Chowdry.
20 Buglers.	2 Peons.
1,050 Privates.	1 Chuckler.

The corps is divided into 10 companies, five of which are stationed with the Head Quarters at Bangalore, three at Secunderabad, one on the Neilgherry Hills, and one at Rangoon.

There is also a Depot Company extra to the establishment, which is stationed at Bangalore, and consists of 2 Havildars, 2 Naigues, and 94 Privates.

The uniform consists of a dark-blue turband, a scarlet tunic with garter blue facings, and dark-blue trowsers with a red stripe. The ordinary working or fatigue dress is of dark-blue cotton cloth with a turband of the same.

The men are armed with the five-grooved muzzle loading Naval Rifle, and carry their ammunition in two pouches made to slide on the waist belt. In addition to his arms each man carries either a Pick-axe, Mamooty, Shovel, or Crow-bar on his back, and also either a gabion, a billhook, or a working knife at his side.

The rates of pay, batta and working allowance are given below.

Pay, batta, and working pay for native ranks.

Full batta, which is only drawn by other Native troops when on service or on a march, is always drawn by the Sappers and Miners wherever they may be.

Rank.	Pay.			Batta.			Working Pay.			Remarks.
	RS.	A.	P.	RS.	A.	P.	1st Cl.	2nd Cl.	3rd Cl.	
Subadar. { 1st Class.	100	0	0	14	3	3	8 Annas a day irrespective of class.			The working pay is granted for a day's work of 8 hours. If the men have far to go the marching time is included in the working hours. Inferior workmen draw 3rd class pay. Those who pass certain tests* draw 2nd class pay. Those who are very superior in their respective trades draw 1st class pay.
2nd "	80	0	0							
3rd "	67	0	0							
Jemadar. { 1st Class.	35	0	0	7	8	0	6 Annas a day irrespective of class.			
2nd "	30	0	0							
Per Diem.										
Havildar ...	14	0	0	5	0	0	4 As.	3 As.	2 As.	
Naig ...	12	0	0	5	0	0	
Bugler { 1st Class	13	0	0	5	0	0	
2nd "	12	0	0							
3rd "	11	0	0							
Private. { 1st Class	9	0	0	1	8	0	
2nd "	8	0	0							
3rd "	7	0	0							

* Vide Appendix C.



APPENDIX A.

THE Secretary of State for India in his Dispatch of the 28th November 1858 quoted in the text, adverts to the opinion held by the late Court of Directors in favour of the enlistment of a greater number of men of the classes of which the corps of Madras Sappers and Miners is principally composed, viz., men of inferior castes of different denominations. To treat this subject fully would require more time and space than the scope and object of this pamphlet will admit of; but as the composition of a Native Corps which has taken part in every service of consequence in this part of the world during the period of a century, and which has always behaved well, is a matter of importance with regard to the Native Army generally, a few remarks are here submitted with the view of indicating the direction in which enquiry may be made.

Tables exhibiting the composition of the Corps of Sappers and Miners at intervals of several years, and also others shewing that of certain regiments of Native Infantry raised in the Carnatic are given below. As the nomenclature of these tables is not precise, it may be mentioned that of the 480 officers and men of the Sappers who are shewn in the return for January 1877 under the head "Other Castes," about 370 were pariahs, the rest being chucklers and men of low caste. Of the 255 Native Christians, it may be presumed that a large proportion are pariahs by descent. An abstract of the return gives

Mussulmen	...	...	...	...	...	...	83
Tamil	...	...	...	...	...	...	348
Telingas	...	...	...	...	...	...	124
Inferior Castes and Native Christians	...	...	...	...	...	...	735

The officers incline to the opinion that the uniform good conduct of the Corps in the Field and in Quarters, is owing, not to the manner of its composition, but to the system, of which "*Non recognition of caste and obedience to every order, whatever it may be,*" are the leading principles.

The maintenance, if not also the introduction, of this system must be ascribed to the Commandants and Officers of the corps, who from the first were specially selected on account of their qualifications, and it is evident that such a system might be far more easily introduced and maintained in a regiment principally composed of Native Christians and men of inferior caste, than in one where the proportion of such men is extremely small, as is the case in the Native Infantry Regiments of the present day.

With respect to composition, two points must be considered, viz., the castes of the men, and the provinces to which they belong. The Corps of Pioneers, and that of Sappers and Miners appear to have varied very little in either of these, as the great majority has always consisted of men of inferior caste from the Carnatic.

On the other hand the composition of the Regiments of Native Infantry is very different from what it used to be. A reference to the subjoined tables will show that Regiments raised in the Carnatic, and formerly almost entirely composed of southern men, have now a large proportion of Telingas in their ranks. For example. The 1st Battalion 6th Regiment (6th M.N.I.) when it returned in 1812 from the expedition to the French Islands had 304 low caste privates, and only 155 Telingas, but in 1876 the number of low caste men in that corps, inclusive of Native Christians, was only 74, whereas that of Telingas was 241. In short, except in the corps of Sappers and Miners it is believed that the number of Telingas in the Native Army now preponderates, while that of Tamil, and of low caste men has diminished.

The Telinga is taller, fairer, cleaner and more docile than the Sepoy from the Carnatic, but his character as a soldier did not stand so high.

Sir Eyre Coote in several of his reports to Government during the war of 1781-82, at which time the "Circar" Battalions were distinct from the "Carnatic" Battalions, expressed himself most unfavorably with respect to the qualifications of the Northern Circar men as soldiers, and the general opinion of the old officers of the Madras Army some thirty-five years ago was in favour of the Carnatic sepoys as compared with those from the north. There are in the Circars certain races, for instance Rachawars, and Velmawars who are well fitted for the Army, but these men seldom take service with us.

Teloogoo Parias, and other low caste men of Teloogoo race are probably as rough and ready as their Carnatic brethren, but it is believed they are seldom enlisted.

A comparison of the composition of the corps of Sappers and Miners with that of the Regiments of Native Infantry generally, would probably lead to the opinion that the late Court of Directors when making the recommendation above mentioned acted with their usual sagacity; but no sufficiently accurate conclusion can be arrived at unless the returns are so framed as to give full particulars. The words Telinga and Tamil denote *race*, but give no information whatever as to the castes of the men composing the totals shown under these heads.

The words "Telinga" and "Tamil" in the subjoined tables properly denote *race*, not *caste*. As used in the tables they may be held to mean all castes of the two races in question except Brahmins, and men of low castes. These last are included under the head "other castes." Neither Teloo goo, nor Tamil Brahmins take service in the army.

Tanjore, Madura, and Tinnevely form part of the Carnatic equally with Madras, Vellore, or Trichinopoly, and they have therefore been included under that head in calculating the percentage.

Composition of the Pioneers in 1827.

Bengal	...	...	1	Mussulmen	...	...	80
Deccan	...	...	16	Hindoos	...	...	631
Northern Circars	...	...	40	Tamil	...	...	832
Carnatic and Trichinopoly	...	...	1,232	Christians	...	...	103
Madura and Dindigul	...	...	93				
Tanjore	...	...	53				1,646
Travancore and Tinnevely	...	...	59				
Malabar and Bombay	...	...	29				
Mysore	...	...	104				
Mahratta	...	...	19				

There are no means of ascertaining the number of men of inferior caste included under the heads Hindoo and Tamil.

Carnatic	...	...	87.30	per cent.
Northern Circars	...	...	2.43	"

Composition of the Sappers and Miners in 1866.

Country.	Native Officers.	Havildars.	Naigues.	Buglers.	Privates.	Caste.	Native Officers.	Havildars.	Naigues.	Buglers.	Privates.
Hindustan ...	1	1	...	...	48	Christians ...	4	12	10	6	142
Northern Circars ...	...	2	5	2	157	Mussulmen ...	...	3	7	...	58
Central Carnatic (Madras, Vellore)	15	38	73	13	582	Brahmins and Rajpoots.	...	1	...	...	...
Southern Carnatic (Trichinopoly) ...	2	5	9	1	126	Mahrattas ...	...	...	...	...	5
Tanjore, Madura, and Tinnevely ...	1	3	2	...	68	Telingas ...	4	2	19	...	202
Baramahal ...	...	...	...	...	...	Tamil ...	5	13	11	...	190
Ceded Districts ...	1	...	...	...	14	Other Castes ...	7	18	42	2	511
Mysore ...	...	...	...	4	113	Indo Britons ...	...	...	...	12	...
Total ...	20	49	89	20	1,108	Total ...	20	49	89	20	1,108

Carnatic ... 70 per cent.

Northern Circars ... 14·16 „

Telingas ... 18·23 per cent.

Tamil ... 17·14 „

Other Castes 46·11 „

Christians' ... 12·81 „ } 58·92.

Composition of the "Queen's Own" Sappers and Miners in 1877.

Country.	Native Officers.	Havildars.	Naigues.	Buglers.	Privates.	Caste.	Native Officers.	Havildars.	Naigues.	Buglers.	Privates.
Hindustan ...	1	...	1	1	7	Christians ...	4	7	9	9	226
Northern Circars ...	...	3	7	...	127	Mussulmen ...	1	2	4	...	76
Central Carnatic (Madras, Vellore).	8	27	51	13	700	Brahmins and Rajpoots.	1	...	...	...	3
Southern Carnatic (Trichinopoly).	6	5	3	2	90	Mahrattas ...	...	...	...	...	3
Tanjore, Madura, and Tinnevely.	3	4	4	1	51	Telingas ...	3	4	7	...	110
Baramahal ...	...	1	...	...	2	Tamil ...	6	10	21	...	311
Ceded Districts ...	...	1	6	1	35	Other Castes ...	5	20	43	1	411
Mysore ...	2	2	12	3	132	Indo Britons ...	...	...	...	8	4
						Europeans ...	...	...	...	3	...
Total ...	20	42	84	21	1,144	Total ...	20	43	84	21	1,144

Carnatic ... 73·51 per cent.

Northern Circars 11·11 „

Telingas ... 9·61 per cent.

Tamil ... 27·18 „

Other castes. 35·92 „

Christians. ... 29·84 „ } 65·76.

*Composition of the 1st Battalion 2nd Regiment, now the 2nd Regiment
M. N. I. (raised in the Carnatic) in 1810, and in 1876.*

1810.

Bengal	8	Mussulmen	364
Deccan	22	Hindoos	261
Northern and Guntoor Circars. 153		Malabars	254
Carnatic and Trichinopoly ...	265		
Madura and Dindigul	61		879
Tanjore	130		
Travancore and Tinnevely ...	23	N.B.—There are no means of ascertaining any particulars regarding these men, but it may be presumed that the term "Hindoos" comprises those whose language was Teloo-goo, and the term Malabar those who spoke Tamil.	
Malabar and Bombay	2		
Mysore	205		
Mahratta	10		
	879		

Carnatic	55·74 per cent.	Mussulmen	41·41 per cent.
Northern Circars... ..	17·40 "	Hindoos	29·70 "
		Malabars	28·89 "

1876.

Country.	Native Officers.	Non-Comm. and Naigues.	Buglers.	Privates.	Caste.	Native Officers.	Non-Comm. and Naigues.	Buglers.	Privates.
Hindustan	1	3	3	8	Native Christians ... ..	...	3	2	17
Northern Circars	2	6	...	203	Mussulmen	8	40	...	203
Central Carnatic (Madras, Vellore).	2	20	11	116	Brahmins and Rajpoots.	1	1	...	3
Southern Carnatic (Trichinopoly).	3	13	1	39	Mahrattas ... ..	...	3	...	6
Tanjore, Madura and Tinnevely.	1	13	...	93	Telingas	2	19	...	240
Baramahal ... ..	...	2	...	9	Tamil	5	13	...	68
Ceded Districts	1	4	...	10	Other Castes ... ..	...	2	...	40
Mysore	6	20	1	99	Indo Britons ... ..	...	...	14	...
					Europeans ... ..	...	...	...	...
Total	16	81	16	577	Total	16	81	16	577

Carnatic	42·98 per cent.	Mussulmen	35·17 per cent.
Northern Circars. 35·17	"	Telingas	41·57 "
		Tamil,	11·78 "
		Christians	2·94 "
		Other castes	6·93 " } 9·87

*Composition of the 1st Battalion 6th Regiment, now the 6th Regiment
M. N. I. (raised in the Carnatic) in 1812, and in 1876.*

1812.

Bengal and Deccan	...	...	39	Mussulmen	...	...	...	258
Northern Circars	...	...	20	Hindoos	...	...	...	155
Carnatic and Trichinopoly	...	...	731	Malabars	...	...	...	175
Madura and Dindigul	...	...	24	Pullars	...	...	...	304
Tanjore	...	...	49	Parias	...	...	...
Travancore and Tinnevelly	...	...	1	Half castes	...	...	...
Malabar and Bombay	...	...	1					
Mysore	...	...	16					892
Mahratta	...	...	10					
Ceded Districts	...	...	1					
				892				

Carnatic	...	90.24 per cent.	Mussulmen	...	29.03 per cent.
Northern Circars.	2.24	"	Hindoos (Telingas).	17.37	"
			Malabar (Tamil)	19.62	"
			Lower castes	34.00	"

1876.

Country.	Native Officers.	Non-Commnd. and Naigues.	Buglers.	Privates.	Caste.	Native Officers.	Non-Commnd. and Naigues.	Buglers.	Privates.
Hindustan	2	2	...	33	Native Christians	...	3	4	37
Northern Circars	2	17	1	231	Mussulmen	9	34	...	183
Central Carnatic	6	20	8	143	Brahmins & Rajpoots	1	4	...	16
Southern Carnatic	2	17	3	116	Mahrattas	1	...	...	10
Tanjore, Madura, Tinnevelly.	...	7	2	17	Telingas	2	24	...	241
Baramahal	...	...	...	...	Tamil	2	16	...	72
Ceded Districts	3	14	1	34	Other Castes	1	...	...	37
Mysore	1	4	1	23	Europeans	...	...	2	...
					Indo Britons	...	...	10	1
Total	16	81	16	597	Total	16	81	16	597

Carnatic	...	46.23 per cent.	Mussulmen	...	30.65 per cent.
Northern Circars.	38.69	"	Telingas	...	40.36
			Tamil	...	12.06
			Other castes	6.19	12.38
			Christians	6.19	

Commandants of the Corps of Madras Pioneers, and Madras Sappers and Miners from 1792 to 1877.

Corps of Pioneers.

1792 to 1798 Lieutenant W. Dowse, Madras Infantry.
 1799 „ 1801 Captain W. Dowse, „ „
 1802 Lieutenant W. P. Heitland, „ „

Battalions of Pioneers.

1st Battalion.

1803 to 1804 Captain W. P. Heitland, Madras Infantry.
 1805 „ 1808 „ E. B. Bagshaw, „ „
 1809 „ 1812 „ R. Hughes, „ „
 1813 „ „ E. W. Snow, „ „
 1814 to 1815 „ A. N. Bertram, „ „
 1816 „ 1819 „ R. McCraith, „ „
 1820 „ 1824 „ W. Milne, „ „
 1825 Lieutenant Wheeler and Captain Crowe, Madras Infantry.
 1826 Captains Crowe, Wheeler & Sinclair, „ „
 1827 to 30th June 1831 Captain W. Murray, „ „

2nd Battalion.

1803 to 1809 Captain J. Fitzpatrick, Madras Infantry.
 1810 „ 1819 „ T. Smithwaite „ „
 1820 „ 1824 „ E. Richardson, „ „
 1825 „ 1826 „ E. Cadogan, „ „
 1827 „ 30th June 1831 Major E. Cadogan, Madras Infantry.

Corps of Pioneers.

1831 Major E. Cadogan, Madras Infantry.
 1832 to 1833 Captain W. Murray, „ „

Corps of Sappers and Miners.

1831 to 1832 Captain A. Lawe, Madras Engineers.
 1833 „ 1838 „ G. A. Underwood „ „
 1839 „ 1843 „ T. T. Pears, „ „
 1844 „ 1852 „ J. W. Rundall, „ „
 1853 „ 1856 „ J. Carpendale, „ „
 1857 Captains Carpendale, Hew Brendergast, and Hill,
 Madras Engineers.
 1858 to 1860 Captain C. Hill, Madras Engineers.
 1861 Captains Rogers & Winscom, „ „
 1862 Captain Winscom, „ „
 1863 „ C. Hill, „ „

1864 to 1868 Lieut.-Colonel C. Hill, Madras Engineers.

1869 „ 1873 „ „ H. N. D. Prendergast, V.C. Madras
Engineers.

1874 „ April 1876 Major Hew Prendergast,
Madras Engineers Officiating.

April 1876 Colonel H. N. D. Prendergast, V.C., C.B. Madras
Engineers.

APPENDIX B.

EXTRACTS FROM THE MADRAS ARMY REGULATIONS OF 1876.

992. The head-quarters of the Sappers and Miners are stationed at Bangalore. Three Companies, exclusive of recruits, will be at head-quarters for instruction in all such branches of military and civil engineering as may be deemed requisite to render them conversant with all duties which they may be called upon to perform in garrison or in field. One of these Companies is to be relieved every year, so that the whole corps may pass through its course of instruction at regular intervals.

993. The remaining Companies are to be employed upon such public works, civil or military, as may be ordered by Government on the recommendation of the Secretary to Government Department Public Works.

994. Except in cases of emergency and with the previous sanction of the Commander-in-Chief, no party under the strength of a complete Company is ever to be employed on detached duty extending beyond the period of one month; and, under no circumstances is any party to be detached under the strength of a complete section.

995. Excepting only for field service, no detachments of any kind are to be made from the head-quarters of the corps, unless when there may be parties available in excess of the three Companies under instruction.

996. Each Company to be complete in itself and prepared for the performance of every duty for which it may be required, independently of the head-quarters of the corps.

* * * * *

998. The corps stands in the same relation to the Commander-in-Chief and different military authorities as a regiment of the line.

* * * * *

1000. When employed in the field, the officer at the head of the Quarter Master General's Department will communicate with the officer commanding the Sappers regarding work properly appertaining to the duty of Pioneers, and the latter will adopt the means at his disposal to attain the object required.

1001. On field service the packs are carried at the public expense.

* * * * *

1008. Officers of Infantry appointed to do duty with the corps of Sappers are to be considered regimental officers equally with the officers of Engineers, with whom they will take rank according to the dates of their commissions in the Army—with the exception that they will not have any claim to the command of the corps, which, in the absence of the permanent commanding

officer, will devolve upon such one of the officers with the corps as the Commander-in-Chief may specially appoint.

1009. No Engineer or other officer who may casually fall into the charge of, or be appointed to do duty with, any portion of the corps on field service or other occasion, shall have any claim to the command of the corps, though senior to the permanent commanding officer who will remain in undisturbed possession of all his rights and privileges as commanding officer.

* * * * *

1111. No officer shall be eligible for appointment to do duty with the Sappers and Miners, who is not, in every respect, qualified to command a company in his own regiment;—nor should any offer himself as a candidate unless he has both talent and taste for Engineer duties, a determination to study, and a fair knowledge of Mathematics and military drawing.

1012. No infantry officer will be appointed to the Sappers and Miners, until he has passed an examination, before the Commandant of the corps in Arithmetic and Geometry. In Arithmetic the examination will extend to Vulgar and Decimal Fractions, Practice and Compound Proportion, and in Geometry to the first three books in Euclid.

1013. Six months after joining the head-quarters of the corps, every officer will be required to pass a satisfactory examination, in Vulgar and Decimal Fractions, the use of Logarithms, Practical Geometry, Mensuration, Plane Trigonometry, Army Signalling, use of the Prismatic Compass, and Chain Box Sextant, Theodolite and Levelling Instruments, including adjustment of instruments, and to be competent to survey with the chain only, with the Theodolite and Chain, and with the Prismatic Compass and Chain; also to survey and take sections with the Y level and with Troughton and Sim's level, including in every case keeping field books, plotting and finishing the drawing, and to be able to make a route sketch or reconnaissance of any portion of the country, or of a military position, and to represent with facility and accuracy the features of the ground either with pen and ink, pencil or brush.

Fourteen months after joining he will be required to show a well-finished plan of a front of a system of fortification drawn by himself. His knowledge of field fortifications of Vauban's first system, and of the book of instruction in Military Engineering, will be tested by examination partly practical and partly on paper.

1014. An officer unable to pass satisfactory examination at either of the appointed periods, will be remanded to his own regiment.

* * * * *

1020. Officers in charge of public works, having parties of Sappers commanded by a European officer employed under their orders, are prohibited from interfering with the interior economy of such parties. Their attention is to be confined to the right employment of the men with reference to the work, while the duty of detaching the parties available for employment rests with the regimental officer.

1021. The permanent Commandant and Adjutant are nominated to Government by His Excellency the Commander-in-Chief.

APPENDIX C.

"QUEEN'S OWN" SAPPERS AND MINERS.

RULES FOR TASKS IN TRADES FOR PROMOTION TO CLASSES, ENTITLING TO FIRST AND SECOND CLASS WORKING PAY.

CARPENTERS.

A Carpenter is qualified for "Second Class" working pay when he can
Carpenters. saw, adze, plane, make common batten doors and windows, line out his work, repair wheel-barrows, helve and handle the tools used by the Corps, dove-tail roughly, and make rough couples. He should be able to keep his tools in order and turn on the lathe a plain cylinder.

A "First Class" Carpenter should be able to make wheel-barrows, helve and handle all kinds of tools, make ordinary tables and chairs, and doors and windows of every description, and roofs under the superintendence of a foreman. He must also be able to sharpen his own saw and keep his tools in order, and should be able to turn ornamental legs for tables and chairs.

SAWYERS.

A set of Sawyers are entitled to "Second Class" working pay when they
Sawyers. can cut in a day 35 superficial feet of jungle wood or 45 feet of teak wood, mean girth of log not to be less than 5 feet. Each man should be able to sharpen and set his own saw.

They are qualified for "First Class" working pay when they can cut 45 superficial feet of jungle wood or 55 feet of teak wood, mean girth the same as for "Second Class;" and line out their work in any kind of timber. They should be able to cut planks of all thicknesses.

THATCHERS.

A "Second Class" man, with three assistants, using Lunka grass, can
Thatchers. thatch one square daily, as follows: one assistant tying bundles and cutting the ends off the grass, one carrying the grass to the thatcher and throwing it on the roof, and one assisting the thatcher.

A "First Class" man, in addition to the above, should be able to ridge and valley (no task for ridding); he can thatch one-and-a-half squares daily.

N.B.—Where there are several thatchers at work fewer assistants are required on the roof, but they are wanted to bring water, split bamboos, nar, &c.

BASKET MAKERS.

A "Second Class" Basket Maker can make four bamboo or six rattan baskets daily, make common bamboo tatties, and put a seat to a chair.

A "First Class" man can make six bamboo or eight rattan baskets daily, and can also make common or cuscus tatties, also all kinds of cane work.

SMITHS.

A Smith becomes eligible for "Second Class" working pay when he can repair iron and steel tools and wheel-barrows, and forge all sorts of nails and hinges; he should be able to weld and steel jumpers.

A "First Class" man should be able to forge pick-axes, all the iron work of wheel-barrows, and all kinds of hinges and nails, make locks and keys and use the lathe, and he should be well acquainted with all kinds of welding and steeling tools and filing.

BRICK MAKERS.

(Gang of 7 men).—No. I, the moulder; No. II, the off-bearer, who removes the bricks from the bench to the hack; No. III brings the clay to the bench and places it on the right side of No. IV, who supplies the moulder with sufficient clay (roughly formed) to make one brick; No. V receives the bricks from No. II, turns and lays them on the hacks to dry; Nos. VI and VII temper clay and bring water.

A man becomes entitled to "Second Class" working pay when he can mould 1,200 bricks or 500 flat or pan tiles in $7\frac{1}{2}$ hours all materials being previously prepared. A "Second Class" man should be able to make common plain flower pots on the English wheel, or on the Native wheel if preferred.

A "First Class" man should be able to mould 1,500 bricks or 800 flat or pan tiles in $7\frac{1}{2}$ hours, materials as per "Second Class," he must also be able to judge the proper description of clay for making bricks and tiles, also know how to stack the bricks in the kiln and burn them. He should also be able to make goglets and two-gallon water chatties.—

Brick, Tile, and Pot Makers to be one trade.

BRICKLAYERS.

A "Second Class" Bricklayer should be able to lay 100 cubic feet of stone, mud, 80 cubic feet in chunam, or two cubic yards of brick-work; he should have three assistants

till the wall is five feet high, and one additional assistant for every scaffolding; he should be able, with three assistants, to plaster two squares in mud or one-and-a-half in chunam, and turn any circular or segmental arches.

A "First Class" Bricklayer should, in addition to the above, be able to execute the following tasks in a day:—

Flat archwork over doors and windows; 17 cubic feet with two assistants.

Circular archwork in bridges.—One cubic yard with three assistants, moulded bricks being furnished.

Flooring.—The task must be regulated by the description of the materials used, to be deferred until data be available.

Cornice work.—Two men with four assistants, 36ft. by 9in. by 9in.

Columns.—One man with three assistants, 6ft. high.

Terracing.—12 men with 35 assistants can complete one square daily.

Pan Tiling.—One man and one assistant one square, if the tiles are placed on the roof.

Flat and pan tiling.—Two men and four assistants one square.

Plastering.—One man and three assistants can plaster three squares of mud, or two squares of chunam, daily (one coat); he should also be able to point in cement.

N.B.—Five men can pound 21 parahs of mortar daily, i.e., 14 parahs of sand and seven of lime—a parah to be 20in. by 20in. by 10in.

STONE CUTTERS.

A "Second Class" Cutter should be able to cut five, and a "First Class" man eight, superficial feet per diem in hard granite, such as is found in Bangalore, roughly dressed; proportional for other kinds of stone and dressing.

A "First Class" man should be able to mark out his own work.

BORING AND BLASTING.

Two "Second Class" men, with a $1\frac{1}{2}$ in. jumper, should be able to bore $2\frac{1}{2}$ ft. daily in granite such as is found in Bangalore. A "Second Class" man should also know how to tamp a hole.

A "First Class" man, in addition to the above, should be able to fire blasts properly and determine where blast-holes should be placed so as to obtain the most advantageous result, and also know the charge to be used in blasting.

TIN SMITHS.

A "Second Class" man should be able to make canisters, common tin watering pots, and lanterns, and have some knowledge of wire work.

A "First Class" man should be able to execute work of any description in tin or zinc, and be able also to solder in copper or brass and execute wire work.

COOPERS.

Coopers.

A "Second Class" man should be able to head and bottom casks and to renew staves and repair hoops.

A "First Class" man should be able to make all kinds of casks and buckets, and new hoops.

SURVEYING.

On entering the Survey School the Sapper will pass an examination in the four Simple rules of Arithmetic, and in writing English letters and figures.

He will then study the Simple and Compound rules of Arithmetic, including fractions vulgar and decimal, and pass a satisfactory examination in them within 90 days;—or failing to do this will be removed to other work.

He will then go through a Course of drawing, printing, and colouring, until he can produce a satisfactory copy of the following Standard Plates:—

- I. Printing Plate.
- II. Conventional Signs, with the Standard tints of the same.
- III. Standard Scales.

He will then study Chain Survey and Mensuration of Areas, will learn to trace Batteries and Magazines; and will practise the pacing of distances.

(1) To execute a chain Survey* correctly† and unassisted,‡ and to plot and calculate the area of the same.—One day's out door work.

Tests for 1st Grade.

(2) To pass an examination in Mensuration of Areas.

(3) To trace Elevated, Sunken or half Sunken Batteries with the Rectangular Magazine.

(4) To pace distances with tolerable accuracy, and to make a scale§ of his own paces.

He will then study Surveying with the Prismatic Compass and Chain, and the use and adjustments of the Y and Dumpy Levels; will draw the Architectural Course (14 plates), will learn Mensuration of solids, and the use of the Plane Table, and will practise the Measurement of simple heights and distances without instruments.

(1) To execute a Prismatic Compass and Chain Survey, correctly and unassisted,|| and to plot the same.—One day's out door work.

Tests for 2nd Grade.

* Scale 50' to 1" (about).

† (Greatest admissible error to be 1' in 100'.)

‡ (Except by 3 labour men to carry the chain, &c.)

§ 6" to 1 mile, showing paces—stating how many paces are equivalent to 100 yards.

|| (Except by 4 labour men).

(2) To run a line of levels in the above survey.—One day's out door work ; and to show fair practical knowledge of the adjustments of the Y and Dumpy levels.

(3) To draw the architectural course of 14 plates.

(4) To pass an examination in Mensuration of Solids.

(5) To make a rough survey with the Plane Table.—One day's out door work.

(6) To measure simple heights and distances roughly, without the use of instruments ; and to pace yards accurately.

He will then study Trigonometrical Surveying, and traversing with the theodolite, and learn the adjustments of that instrument ; and will also practise filling in the details of a Survey with the plane table, or prismatic compass.

He will learn to use logarithms in the calculations necessary for the above triangulation.

He will make drawing and estimates from specifications.

He will practise simple contouring in the field.

He will learn to lay off simple curves with the theodolite.

He will learn to calculate the Area of a piece of ground by the Traverse Table, and to reduce Areas on paper.

He will learn how to find the Meridian, and Variation of the Compass roughly.

To execute a trigonometrical survey correctly and unassisted with the theodolite, and to show a practical knowledge of the adjustments of that instrument. A fair plan of the survey and a diagram of triangulation is to be made, the roads to be traversed with the theodolite, and details filled in with the Plane Table or Prismatic Compass.—Extent of survey to be about 3 square miles.

(2) To make the Logarithmic calculations necessary for the above triangulation.

(3) To draw a plan from specification, and to estimate the same.

(4) To make and contour in the field a rough plan of a piece of ground.

(5) To lay off a simple curve with the theodolite.

(6) To calculate the Area of a piece of ground by the Traverse Table, and to reduce on paper an irregular Area to a mensurable form.

(7) To find roughly the Meridian, and the Variation of the Compass at the station.

The following are the text books, &c. for reference and instruction, in use in the Survey School, Q. O. S. & M.

1. Roorkee Papers No. VII, on Surveying (Third Edition).
2. Instruction in Military Engineering, S. M. E. Chatham.
3. Arithmetic, by Bradshaw.
4. Mensuration, Survey School, Q. O. S. & M.
5. Adjustments of levels, Survey School, Q. O. S. & M.
6. Standard plates, &c. (vide accompanying list).
7. Logarithm Tables (Hutton's).

COOPERS.

Coopers.

A "Second Class" man should be able to head and bottom casks and to renew staves and repair hoops.

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(5) To make a rough survey with the Plane Table.—One day's out door work.

(6) To measure simple heights and distances roughly, without the use of instruments ; and to pace yards accurately.

He will then study Trigonometrical Surveying, and traversing with the theodolite, and learn the adjustments of that instrument ; and will also practise filling in the details of a Survey with the plane table, or prismatic compass.

Course of study for 3rd Grade.

He will learn to use logarithms in the calculations necessary for the above triangulation.

He will make drawing and estimates from specifications.

He will practise simple contouring in the field.

He will learn to lay off simple curves with the theodolite.

He will learn to calculate the Area of a piece of ground by the Traverse Table, and to reduce Areas on paper.

He will learn how to find the Meridian, and Variation of the Compass roughly.

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5. Adjustments of levels, Survey School, Q. O. S. & M.
6. Standard plates, &c. (vide accompanying list).
7. Logarithm Tables (Hutton's).

8. Madras Civil Engineering College Papers No. IX, on Estimating.
These works are to be used as follows :—

Arithmetic.

For Arithmetic.—Arithmetic by Bradshaw.

Drawing, Printing and
Colouring.

Drawing, Printing, and Colouring.—Roorkee papers
on Surveying, ch. I, and Standard Plates.*

For 1st Grade :—

1st Grade,
Text books

(1) Chain Survey.—R. P. S. ch. II, and ch. X,
Prob. 1 to 6.

and books of reference.

(2) Mensuration of Areas.—“Mensuration,” Q. O.
S. & M.

(3) Tracing Batteries.—Instruction in Military Engineering, Plate
XXI, with Sections 11 to 13; and Plate XXVIII, with Section
19.

For 2nd Grade :—

2nd Grade,
Text books

(1) Prismatic Compass Survey.—R. P. S. ch. III.

and books, &c. of refer-
ence.

(2) Use and adjustments of Levels.—R. P. S. ch.
XII, pp. 183 to 190, 192, and 195 to 205; and
“Adjustments of Levels,” Q. O. S. & M.

(3) Architectural Course.—Standard Plates.*

(4) Mensuration of Solids.—“Mensuration,” Q. O. S. & M.

(5) Use of Plane Table.—R. P. S. ch. VII, pp. 114 to 119.

(6) Measurement of Heights and Distances.—R. P. S. ch. X, Prob. 7
to 12.

For 3rd Grade :—

3rd Grade,
Text books

(1) Trigonometrical Survey with the theodolite,—
R. P. S. ch. IV, and ch. VI.

and books, &c. of refer-
ence.

(2) Logarithmic calculations of the above.—R. P. S.
ch. VI, and Logarithm Tables (Hutton's).

(3) Specification and Estimating.—Standard Plates* &c., and Madras
C. E. College Papers No. IX.

(4) Contouring.—R. P. S. &c.

(5) Laying off curves.—R. P. S. p. 16, and Instruction in Military
Engineering, pp. 307 and 308.

(6) Areas by Traverse Table, and reduction of Areas.—R. P. S. ch. V,
and ch. X, Prob. 13 to 20; and Logarithm Tables (Hutton's).

(7) Meridian, and Variation of Compass.—R. P. S. pp. 228, 229.

* STANDARD PLATES, &c.

I. STANDARD SCALES :—

1. General Survey,—6 inches to 1 mile.

2. Details of Survey,—12 “ “

3. General Plans of Buildings,—100 feet to 1 inch.

4. Working Plans of Buildings,—10 “ “

5. Details of Buildings,—5 “ “

II. CONVENTIONAL SIGNS, of Jungle, Roads, Canals, Paddy fields, &c., &c., with Standard Tints for the same.

III. PRINTING PLATE giving standard sizes of :—

Upright Block characters,	$\frac{1''}{6}$	
Slanting Block do.	$\frac{7''}{60}$	
Italics	$\frac{7''}{60}$	& $\frac{4''}{60}$
Figures	$\frac{7''}{60}$	

IV. SPECIFICATIONS :—

Public Bungalow, in *English and Tamil*.
Bridge of Three Arches, in *English*.

V. ARCHITECTURAL DRAWINGS :—

1. Brick Moulding, bench, mould and hack.
2. Brick Kiln as used at head-quarters.
3. Brick Work, different bonds, &c.
4. Brick Maker's hack barrow.
5. Traveller's Bungalow.
6. Open Shed.
7. Terraced roof Guard Room.
8. Details of Terraced Roof.
9. Section of Terraced Roof.
10. Solitary Cell.
11. Bridge of three arches.
12. Aqueduct.
13. Head Sluice.
14. Battery for (4 guns)*

By Order,

A. F. HAMILTON, CAPTAIN, R.E.,
Adjutant, Q. O. S. & M.

BANGALORE,
October 1876.

CHUCKLERS.

A "Second Class" man should be able to make chupples, repair and alter accoutrements neatly, and make a kit bag and shields for tools.

Chucklers.

A "First Class" man should be able to make a pair of ammunition boots from measurement in two days, to cut out and sew all kinds of work in leather and make girths in gut or leather; he should also be able to choose leather.

* Half sunken, 2 guns and 2 howitzers and 2 mortars.

PHOTOGRAPHY.

A "Second Class" man to be able to clean plates ready for use, to coat a plate, and take a negative and develop and fix the same.

A "First Class" man, in addition to the above, to be able to prepare the negative and sensitizing baths, and prepare paper for printing, and also to take any sort of negative from life, or nature, or from copies, and to rectify any baths that may get out of order.

FIELD WORKS:

A man should be eligible for "Second Class" pay when passed by the Field Work Instructor as able to execute neatly and quickly all the various subjects appertaining to Field Works as laid down in the work of instruction in Military Engineering, and forming the course of annual instruction. The task is not to include battery tracing. Road making is to be included in the course of Field Work.

TELEGRAPHY.*

					Words per minute.
First Class man to receive	...	...	...	...	12
First Class man to send	...	...	...	...	16

FLAG, LAMP, AND HELIOSTAT SIGNALLING.

					Letters per minute.
Reading and writing a message from a small flag at a short distance	...	...	...	...	15
Reading a Cipher message from a small flag through a telescope	...	...	...	...	16
Reading a message from a small flag through a telescope					20
Reading a message from a small flag at a short distance.					25
Reading and writing a message from a Heliostat	...				15
Reading a Cipher message from a Heliostat	...				16
Reading a message from Heliostat	...	...	...		20
Reading and writing a message from a Lamp	...				15
Reading a Cipher message from a Lamp	...				16
Reading a message from a Lamp	...	...			20
Signalling legibly with a small flag	...	...	...		25
Signalling legibly with a large flag	...	...	...		20
Signalling legibly with a Heliostat	...	...	...		20
Signalling legibly with a Lamp	...	...	...		20

* This subject being under revision the section is incomplete.

PRINTING AND COMPOSING.

On entering the school to learn Printing and Composing the Sapper should show that he has acquired a sufficient knowledge of English.

When he has attained some proficiency in his trade he will be put through the following tests to ascertain his fitness for promotion to 2nd Class of working pay :—

(1) To tell the names of the different kinds of type used in the press, Tests for 2nd Class. and the places of the letters in the type cases.

(2) To show that he can place the type in the chase, ink and print and clean the type when required.

(3) To print 150 *single copies* in one hour without mistake.

(4) To show a fair knowledge of English reading and spelling.

The following are the tests for 1st Class :—

Tests for 1st Class. (1) To execute the work laid down for a 2nd Class man in a smart manner.

(2) To compose an ordinary piece of work accurately, and to punctuate and arrange his work with uniformity.

(3) To show that he is able to correct any faults in the working of the press, and that he can make a roller.

(4) To print 180 *single copies* in one hour without mistake.

(5) To show that he is well acquainted with English reading, writing and spelling.

LITHOGRAPHY.

Before entering the school to learn Lithography the Sapper should (as a general rule) have passed the examination for 2nd Grade in the Survey School, and be able to show satisfactory specimens of his drawing and printing by hand.

He should also shew a sufficient knowledge of English.

He will be required to pass the following tests of proficiency in his trade before promotion to the 2nd Class of working pay :—

(1) To transfer an ordinary plan or drawing from prepared paper Tests for 2nd Class. to the stone, and ink and print the same.

If properly transferred a plan should furnish 500 copies.

(2) To show that he is able to prepare a stone for work, and clean it when no longer required.

(3) To prepare ink for use.

(4) To print at the large press 30 copies an hour of a large plan or form without mistake.

(5) To copy the Survey School Printing Plate by hand (on ordinary paper) neatly and correctly.

The following are the tests for 1st Class :—

Tests for 1st Class. (1) To perform in a superior manner the work laid down for a 2nd Class man.

(2) To prepare transfer paper, and to copy thereon any plan or design given him.

- (3) the press. working of
- (4) To strike off 40 copies an hour at the large press of well finished work.
- (5) To print by hand in any of the usual types, in an unexceptionable manner.

BOOK BINDING.

The following are the tests which the Sapper will be required to pass before becoming entitled to 2nd Class working pay :—

Tests for 2nd Class.

- (1) To show that he understands the use of the cutting and of the sewing press.
- (2) To engrain the edges of a book, and ornament with a hot die.
- (3) To bind an octavo book (about 1" thick) in one day, in a rough but neat style, and to place the pages properly in order before doing so ;—binding materials having been prepared beforehand.

The following are the tests for 1st Class :—

Tests for 1st Class.

- (1) To execute with superior finish the work laid down for a 2nd Class man.
- (2) To make the front edges of a book concave.
- (3) To gild and ornament a book in a plain style, and to work on headbands.
- (4) To bind an octavo book (about 1" thick) in one day, in a superior style, and to correct any error in the arrangement of the pages.

By order,

(Signed) A. F. HAMILTON, CAPTAIN, R.E.,
Adjutant,

"Queen's Own" Sappers and Miners.

Books must be returned within one month of
date of issue. Per Regd. Post

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date of issue. Per Regd. Post

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13294

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Author Wilson, Lt-Col. W.J.

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